THE ELABORATION LIKELIHOOD MODEL OF PERSUASION:

Changing Attitudes Toward AIDS Victims and Homosexuals.

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ABSTRACT.

This study considered the validity of Petty and Cacioppo's (1981, 1986a, 1986b) Elaboration Likelihood Model of Persuasion (ELM) in the context of an attempt to enhance favourable attitudes toward AIDS victims and homosexuals. The relative impact of "central" versus "peripheral" route processing of a dispassionate written message and a threat appeal was examined. It was hypothesized that a favourable advocacy would, when processed centrally, induce attitude change which is relatively more persistent over time than if it were processed peripherally. A significant gender difference in attitudes toward both AIDS victims and homosexuals was also hypothesized and a high positive correlation between these attitudes was predicted. Attitudes were measured using the "Kite Homosexual Attitude Scale" (Kite & Deaux, 1986), and the "Attitudes to AIDS Victims Scale", an instrument devised by the author for the purposes of this study.

A significant improvement in subjects' attitudes toward AIDS victims and homosexuals was recorded over the four weeks between assessments. Gender was found to be a powerful predictor of attitude. Consistent with expectations, males were significantly less favourable in their attitudes toward both AIDS victims and homosexuals than females. Scores on the two attitude measures were highly correlated. ($p=.7775$). In all other respects the findings were inconsistent with the experimental hypotheses and the adequacy of the ELM was called into question as a result. Because of the limitations of the study, however, the issue was inconclusive. The use of threat appeals as a preventive health strategy was discounted.

CHAPTER 1

INTRODUCTION.

The Acquired Immunodeficiency Syndrome was first described in the United States in 1981. In the relatively short space of time since then the acronym "AIDS" has entered the vernacular of the English-speaking world, while the syndrome itself has commanded a degree of media attention normally reserved for brush-fire war or natural disaster. An entire research and pharmaceutical industry has grown up around the disease, and international concern about its spread has resulted in massive financial appropriations, all applied to a search for what, to date, has been an elusive nostrum.

The level of attention given AIDS might be said to be disproportionate when considered relative to that devoted to other communicable and no less fatal conditions. Nonetheless, its advent has clearly given rise to widespread public alarm, and it is perhaps to that alarm that the evident preoccupation with the disease might be attributed. Irrespective of underlying reasons, however,it is evident that AIDS has been highly influential in the formation of people's attitudes in a number of critical areas.

Identified in some quarters, for example, as "the homosexuals' disease" (Chetwynd, 1987), AIDS has given rise to extremist calls for, among other things, the compulsory registration and medical screening of all known homosexual men. Fear of its contraction has, moreover, underscored the refusal by some members of the medical profession to treat or in any way come into contact with victims of the disease, just as it has lead to the social isolation of those found to be carrying the AIDS antibodies (Smilgis, 1987).

Quite clearly, not all reactions to AIDS have been either socially constructive or necessarily consistent with efforts to prevent its further spread. Discriminatory practices and the perpetuation of myths about the selective nature of the disease may well, in fact, prove counter-productive. Given this, the AIDS issue confronts us not only with the variability of peoples' attitudes, but also with the more urgent question as to how those attitudes can be modified toward ends which are both more caring and socially responsible.

It is this question which is addressed generally in the present study. In the context of an attempt to enhance favourable attitudes toward AIDS victims and homosexuals a model of persuasion and attitude change is examined and conclusions drawn as to its reliability in producing attitude change which is both predictable and persistent in nature.

Attitude and Persuasion.

The attitude construct has been one of the most central in the study of social psychology (Allport, 1968, cited in Fishbein & Ajzen, 1975). Generally regarded as a latent variable guiding and influencing behaviour, it has lain at the heart of explanations of such divers phenomena as interpersonal attraction, discrimination, political decision-making and preventive health practices. Because of its assumed role in the determination of behaviour, moreover, its study has inevitably been tied to the study of influence and persuasive communication. The modification of peoples' behaviour via the manipulation of their attitudes has been a persistent aim of advertisers, religious groups, educators and governments alike and in this respect attitude has consistently been regarded as a tool for social change.

Despite the traditionally central place given attitude in applied fields of psychology, however, its operational definitions have been many and its meaning ambiguous as a result (Fishbein & Ajzen, 1972). Typically low correlations between attitudes and behaviour have cast doubt on the predictive utility of the construct, while extensive empirical research has produced little consensus as to how attitudes might be changed. (Himmelfarb & Eagly, 1974) These evident deficits have contributed to what, by the late 1960's, had become a confused area of study and prompted Kelman's claim (1974) that attitude research was "but a cheap substitute for more elaborate studies of social psychology". It was this perception which underlay the subsequent hiatus in the psychological investigation; a hiatus which has persisted from that time until very recently.

The last few years have seen a resurgence in interest in the study of attitudes and researchers are once more exploring the processes underlying the attitude-behaviour relationship. Despite the specification of conditions under which attitudes would and would not predict behaviour , however (Ajzen & Fishbein, 1977, cited in Petty & Cacioppo, 1986a), the deficits in past research have remained problematic and account substantially for the less enthusiastic resumption of investigations into persuasive communication and attitude change (Petty & Cacioppo, 1986a). The quantity of the data and the diversity of theoretical perspectives have presented major obstacles to persuasion researchers, not least because of the frequently contradictory nature of the evidence that has been obtained. Independent variables thought to be effective in enhancing persuasion in some contexts have been found to have negligible or even detrimental effect in others. Even for the simplest of variables mixed results have been obtained, underscoring not only the complexity of the persuasion-attitude relationship, but also the historical lack of agreement concerning the role of the many persuasive variables in determining the closeness of that relationship.

The value of continuing research into attitude change might still , therefore, be legitimately called into question. Doubts as to its utility notwithstanding, however, the area has again become a popular one for researchers. For an explanation of this one need only look to current preoccupation with the attitude-behaviour correspondence and, in particular, the enduring belief in the potential for influencing peoples' social behaviours by the manipulation of their attitudes. The identification of variables and conditions which will effect attitude change, enhance compliant behaviours and ensure the persistence of those behaviours has an intrinsic interest of its own; all the more because of the social, political and/or financial ends to which those variables might be applied.

Increasingly, therefore, the study of persuasion and attitude change has focussed upon the development of new models for understanding the inconsistencies of past research and enabling greater generalisation about what components in the persuasion process are effective in bringing about attitude change. This study describes one such model developed by Petty and Cacioppo (1981,1986a,1986b), and considers its application and effectiveness in the enhancement of positive attitudes toward AIDS victims and homosexuals. By way of introduction, the principal elements or variables of persuasion upon which that model is based are briefly outlined.

The Components of Persuasion.

The study of persuasion has almost inevitably been reduced to the study of communication. So much so that the classical analysis of communication as a matter of who says what, via what medium, to whom , and for what purpose (Lasswell, 1948, cited in McGuire, 1985), underpins the traditional division of the components of persuasion into five broad classes of variable. Specifically: message source, the

message itself, the communication channel used, the message recipient, and the target or intended purpose of the communication.

Source Variables. Those components or characteristics generally regarded as falling under the rubric of message source variables include source credibility, attractiveness and power. These three characteristics reflect the classical cognitive-affective-conative analysis of attitudes and are usefully described in the three part (internalisation, introjection and compliance) model of attitude change devised by Kelman (1961, cited in McGuire, 1985).

In that model Kelman defines source credibility as being dependent upon the apparent trustworthiness and expertise of the source and whether he or she is perceived by the message recipient as willing to impart that expertise without distortion or bias. Given these qualifying characteristics, the persuasive impact of a message is increased and recipients are, as a consequence, more likely to assimilate the information imparted and incorporate it into their normative structures (Eagly, Wood & Chaiken, 1978). Source attractiveness, on the other hand, is described as resting on the similarity, familiarity and likeability of the source in the eyes of the message recipient and is, according to Kelman, moderated by that recipient's level of motivation to enhance his or her self-image by identifying with such a source. To the extent that motivation is present, the attractiveness of the source has proven critical in determining the persuasive impact of a communication (McGuire, 1985). The final source characteristic, power, is simply determined by the degree to which the source is perceived as having control over rewards and punishments and is able, consequently, to ensure behavioural compliance (Wheeless, Baraclough & Stewart, 1983).

These three source characteristics are by no means exclusive and alternative analyses have introduced additional dimensions to the source variable - persuasion relationship. While there is evidence to support Kelman's tricomponential analysis (Insko,Drenan & Soloman, 1983), it would be unwise to consider the persuasive impact of source as reflecting three simple main effects. The likely interaction between the three variables (e.g., credibility and power) suggests, rather, that attitude change is in fact brought about by a combination of characteristics (Hass, 1981, cited in McGuire, 1985). Given the potential for additional contextual effects, it is apparent that the overall effect of source variables on the persuasive impact of a communication will be difficult to predict.

Message Characteristics. Message characteristics have been extensively studied and there seems to be little disagreement among researchers concerning the critical nature of message style to attitude change. The type and intensity of the advocacy or appeal, the ordering of arguments, the affective component, language intensity and message saliance all feature among the many subclasses of variables considered under this head (Reardon, 1981: McGuire, 1985). The extent of the research notwithstanding, however, relatively few empirically based generalisations can be made as to what make a particular message persuasive. The inconsistency of research findings and the undoubted interaction with recipient characteristics such as age, sex and intelligence again make prediction difficult (Petty & Cacioppo, 1986a).

Communication Channel. Channel variables are those paths of communication by which a message is relayed to the recipient. Television, the printed word. political hoardings are all examples of the various means used to impart arguments and appeals, and much research has been devoted to examining how these alternative means affect the persuasive impact of a communication. Differential media effects

have been observed. Television, for example, has been found to command greater attention relative to the printed word. Information retention and attitudes, however, have been shown to be more closely related to print than to exposure to the electronic media (Barrows, 1981, cited in McGuire, 1985). Thus while, for simple messages, the attention commanding superiority of television may well be employed to advantage, for difficult information print has been found to be marginally superior, particularly if the source is regarded as relatively more credible (Chaiken and Eagly, 1976, 1983).

Clearly, then, while the relative differences in the persuasive impact of channel variables can be readily determined, those differences must be considered not in terms of their main effect, but rather in terms of their interaction with other persuasive variables. The mediation of persuasion again becomes, therefore, a matter difficult to predict (McGuire, 1985).

Recipient Characteristics. Similar interactions must also be taken into account when considering the personal characteristics of the message recipient. Dispositional factors such as age and suggestibility will interact with message and situational variables with the result that the persuasive impact of a communication will be moderated not only by source and message variables, but also by individual difference.

Such moderating effects have been found for recipient gender, age, self-esteem and level of motivation or attention to the communication. In the case of gender, studies of sex differences have provided some support for the view that females are more persuasible than males, although the magnitude of difference is, for all practical purposes, negligible (Eagly & Carli, 1983). Recipient motivation to evaluate or

process a message is also critical and is of particular significance to the present study. Inferred from the recipient's level of personal involvement, issue relevant knowledge and interest in an issue, motivation is described by Petty and Cacioppo (1986a, 1986b) as dependent principally upon three situational variables: the personal relevance of the message, the degree of personal responsibility for evaluating that message and the number of source from which it has been obtained. Should, for example, a recipient consider an issue to have "significant consequences for [his or her] own life" (Apsler & Sears, 1965, cited in Petty and Cacioppo, 1986a), that recipient will be more likely to critically evaluate any relevant information and, in the case of a credible advocacy, integrate that information into his or her normative structure.

Target Variables. The most common aim of any persuasive communication is, of course, to bring about an attitude change. This has been the main intent influencing the use of each of the four broad classes of variable described above. An additional, but no less significant object, is to ensure the persistence of that change in the face of possible future counter-persuasion. The latter aim is of particular theoretical and applied significance, not least because it tightens the criteria as to what constitutes a truly effective persuasive message.

Research into the temporal decay of induced attitude change indicates wide variation in the length of time for which an attitude change is maintained. Observations range from days (e.g., Ranis et al., 1977) to months (P.Smith, 1976), the period varying according to the variables involved. Delayed impact effects, where the persuasive content is strong, have also been observed with similar variation (Cook & Flay, 1979, cited in McGuire, 1985).

The extent of these variations in persuasive effect illustrates the complexity of inducing persistent attitude change and, particularly, the degree to which that persistence is subject to a wide range of potential interactions. Techniques for ensuring attitude persistence are, therefore, many and stratagems such as the manipulation of motivation and the "inoculation" of recipients by pre-exposure to belief-threatening materials are representative only of the possible range of manipulations (McGuire, 1985).

Retrospective.

Clearly, then, the persuasive impact of a communication is complexly mediated. It is dependent not just upon a single element in the communication process, but rather upon a multiplicity of classes and sub-classes of persuasive variables and the interactions between them. This fact underlies both the inconsistency of the findings of past research as well as the ongoing difficulty of predicting attitude change outcomes, and it is against this background that Petty and Cacioppo (1981,1986a,1986b) have developed their general theory of attitude change which they call "the Elaboration Likelihood Model of Persuasion"

The Elaboration Likelihood Model of Persuasion (ELM).

Attempting to account for the differential persistence of induced attitude change, while integrating the many apparently inconsistent research findings and theoretical perspectives, Petty and Cacioppo (1986a) have conceptualised persuasion as occurring via one of two distinct routes, the "central" processing route and the "peripheral". Following Chaiken's (1980) cognitive analysis of persuasion, they define central route processing as involving the critical evaluation, or elaboration, on

the part of the message recipient of the essential worth of the message content. Intrinsic to that evaluation will be an assessment of the extent to which the advocacy advanced in the message is supported. In their own terms: "[This] first type of persuasion is that which likely results from a person's careful and thoughtful consideration of the true merits of the information advanced in support of an advocacy" (Petty & Cacioppo, 1986a, p.125). Here the quality of the message content is a critical determinant of the persuasive impact of a communication.

The peripheral route to persuasion, by contrast, focuses on the characteristics of the persuasion process, rather than upon the merits of the material presented. In this context persuasion occurs as a result of such simple contextual cues as source attractiveness which induce attitude change without necessitating detailed cognitive evaluation of the message content (Petty & Cacioppo, 1986a). Although peripheral cues are typically defined as characteristics of the message source or the situation in which the communication occurs, they can also include psychological and physiological variables. Petty and Cacioppo (1986a) argue for example that when an association is formed in the mind of the recipient between the attitude object and some negative stimulus in the persuasion context, relatively primitive affective states can be triggered which induce attitude change in the absence of argument processing.

Intrinsic to the ELM is the proposition that while attitude change can be induced by either peripheral cues or by elaboration upon the information presented, the impact of the latter is both more significant and more enduring. Specifically: "Attitude changes that result mostly from processing issue-relevant arguments (central route) will show greater temporal persistence, greater prediction of behaviour and greater resistance to counter-persuasion that attitude changes that result mostly from peripheral cues." (Petty & Cacioppo, 1986a, p.175). A central prediction of the

ELM, therefore, is that when issue-relevant elaboration is high it will typically result in new information about the issue being integrated into into the recipient's underlying normative structure and as such will be more resistant to counter-persuasion.

It should be apparent, then that the former outcome (i.e., persistent attitude change) will be subject not only to the quality of the advocacy or appeal. It is also, according to Petty and Cacioppo (1986a), dependent upon the amount and nature of issue-relevant elaboration in which the message recipient is willing or able to engage. This will vary according to the individual and situational factors involved, such that only when the communication context enhances a recipient's argument scrutiny will the "elaboration likelihood" be sufficient to ensure critical attention to, and assimilation of, the message content.

Petty and Cacioppo (1986a) attribute the variability of recipient involvement in argument scrutiny to people's inability to attend and respond cognitively to the multiplicity of incoming stimuli simultaneously. For purely adaptive reasons, it is argued, individuals are not motivated to scrutinize every counter-attitudinal message received and will, therefore, process systematically only those messages which are high in personal relevance or import. The assumption implicit in this limited processing capacity hypothesis is that recipients are restricted to processing *either* message content cue *or* situational cues. They are, in effect, forced to choose between the central and peripheral processing strategies, that choice being dependent upon the dispositional characteristics of the individual and the context in which the communication takes place.

Motivation to process notwithstanding, the situational and dispositional characteristics of the communication context also impinge on the recipient's *ability* to process. Possible determinants are many and might include any of the five categories of communication variables and their interactions. Among these Petty and Cacioppo (1986a) nominate task variables such as message comprehensibility, individual differences such as intelligence, and such contextual variables as might disrupt cognitive evaluation. Only once the motivation *and* the ability to process centrally are established do the qualities and characteristics of the actual message become critical determinants of attitude change. Petty and Cacioppo (1986a) summarize both the proposition and its consequences simply:

> "As motivation and/or ability to process arguments is decreased, peripheral cues become relatively more important determinants of persuasion. Conversely, as argument scrutiny is increased, peripheral cues become relatively less important determinants of persuasion."
>
> (at p.5)

The alternative routes to persuasion and the principal determinants as to which of the two paths is followed are described in Figure One (see p.16). Simply, whether a message recipient engages in central route processing is dependent initially on whether he or she is motivated to process. This will, as has already been noted, depend on the dispositional and situational factors which determine the personal relevance of the communication for the recipient. Ability is similarly critical. Motivation to process centrally in the absence of the capacity to do so will, according to the ELM, result in the predominance of peripheral cues as the final determinants of persuasion. Motivation and ability to engage in systematic processing being present, however, the recipient will scrutinze the message content and access, rehearse and manipulate his or her issue-relevant schema to arrive at a cognitive position which is either favourable,

unfavourable or neutral with respect to the issue or attitude object (Petty & Cacioppo, 1986a).

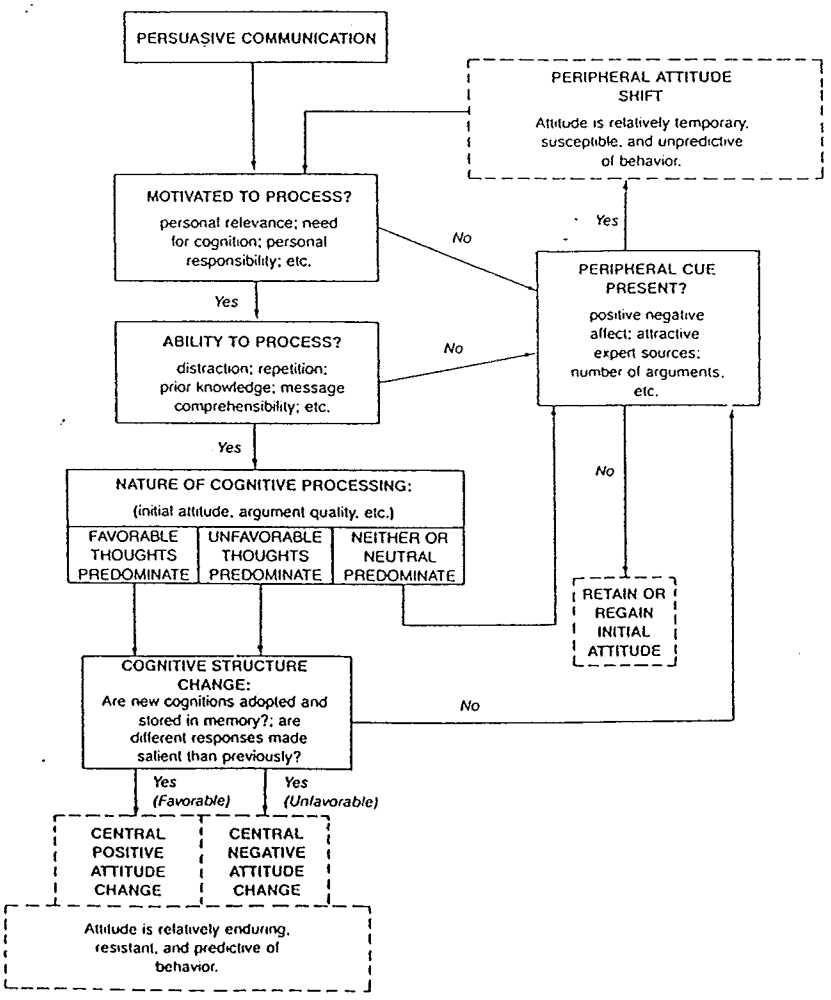
To determine the nature and extent of the cognitive processing being engaged in, and thereby the processing route being followed, Petty and Cacioppo (1986a) describe several assessment techniques. Self-report, argument recall and thought listing are among those outlined. Different methodologies notwithstanding, all are aimed at assessing how much cognitive activity is being devoted to issue-relevant thinking. The thought listing technique, for example, requires recipients to list their thoughts either in anticipation of, during, or after the presentation of the message. These thoughts are then categorized by independent judges or by the recipients themselves according to their favourableness or unfavourableness toward the attitude object (Brock, 1967, described in Petty & Cacioppo, 1986a).

Establishing in this manner whether, firstly, elaboration has occurred and, secondly, if that elaboration has resulted in a strong or neutral response, it is then possible to determine whether there has been any accompanying change in the recipient's cognitive structure. If the recipient's response is weak or neutral, further analysis is assumed to be redundant since, according to the ELM, such a reaction will result in the relative predominance of peripheral cues. This will divert processing into the peripheral route. If, on the other hand the recipient's reaction is strong, a change in his or her cognitive structure is predicted which,in its turn, will result a shift in in his or her attitude. Irrespective of whether that attitude shift is positive or negative, the final proposition of the model then pertains; specifically that the newly induced attitude will be relatively enduring, resistant to counter-persuasion and predictive of behaviour.

The peripheral route provides the alternative processing path for those who are either unmotivated or unable to engage in or maintain close argument scrutiny. The posited end-point of this route is an attitude shift which is independent of any change in the recipient's cognitive structure and which is determined by the multiplicity of variables in the communication context. In the absence of systematic processing of message content that attitude will be relatively temporary, susceptible to counter-persuasion and unpredictive of behaviour.

Figure 1. **The Elaboration Likelihood Model of Persuasion.**

A schematic depiction of the two routes to persuasion. (Adapted from Petty, 1977: Petty & Cacioppo, 1981. In Petty & Cacioppo, 1986a)



Determining Elaboration Likelihood.

The key determinants of ELM having been identified (i.e., motivation, ability and argument/message quality) the question arises as to how, according to the model, those determinants can be manipulated to allow reliable prediction about the persuasive impact of a communication.

Affecting Motivation. Petty and Cacioppo (1986a) describe four motivational variables or characteristics which can be manipulated to affect an individual's willingness to systematically process an incoming message: (1) personal relevance, (2) the need for cognition, (3) the number of message sources; and (4) personal responsibility for processing. If, for example, the message recipient is the only one of many to whom responsibility for evaluating an advocacy has been assigned, there will be a commensurate increase in his or her motivation to process (Petty, Harkins & Williams, 1980). Similarly, an increase in the number of message sources supporting a recommendation is posited to increase a recipient's willingness to process by reinforcing the desire to conform to an attitude position which is apparently held generally to be "correct" (e.g., Festinger, 1954, cited in Petty & Cacioppo, 1986a).

Of those categories of variable influencing motivation Petty and Cacioppo (1986a) represent personal relevance as having the greatest influence. Variously labelled "ego involvement", "personal involvement", and "issue involvement", personal relevance is described as occurring whenever people expect an issue " to have significant consequences for their own lives" (Apsler & Seers, 1968, cited in Petty & Cacioppo, 1986a). That expectation can be influenced by many factors such as the actual number, nature and extent of those personal consequences, but the central thesis is that " as the personal consequences of an issue increase, it becomes more important to

form a veridical opinion because the consequences of being incorrect are greater" (Petty & Cacioppo, 1986a, at p.82). It follows therefore, that the more personal considerations attendant on an issue become apparent, the more individuals will be motivated to evaluate the merits of the advocacy presented (Petty & Cacioppo, 1979).

Motivational influences are not, of course, restricted only to contextual variables. Dispositional factors such as age, intelligence and differing needs for cognition (Petty, Kao,Cacioppo & Rodriguez, 1986) are also significant. Although not open to manipulation themselves, these individual characteristics do have implications for how a message is developed. They are, moreover, critical moderators of an individual's willingness to process centrally.

Affecting Ability. Although just as subject to dispositional variables, the ability of an individual to process message content systematically is, again, most influenced by the variables in the communication context. Among these Petty and Cacioppo (1986a) cite distraction and message repetition as being of particular significance.

In the case of distraction, thoughts that would normally be elicited by a communication are disrupted, interfering as a consequence with the recipient's capacity to access and rehearse issue-relevant schema, counter-argue, or otherwise develop an objective position with respect to the advocacy. Research on the subject is supportive of this distraction - disruption hypothesis (e.g., Baron,Baron & Miller, 1973) and the relatively simple expedient of engaging recipients in tasks additional to that of attending to the communication has been shown to be sufficient in bringing about a deterioration in processing capacity (Petty, Wells & Brock, 1976).

In the context of the ELM the hypothesis is more specifically rendered:

> "If the predominant thoughts to a message without distraction were unfavourable, then distraction should disrupt those unfavourable thoughts and lead to an increased agreement. However, if the predominant thoughts were favourable the distraction should disrupt those favourable thoughts, resulting in decreased agreement." (Petty & Cacioppo, 1986a, at p.63).

Thus, where the advocacy is weak in persuasive content distraction should enhance persuasion, since it is assumed that any unfavourable thoughts engendered by that advocacy will be disrupted and, therefore, lessened in their effect.

Just as distraction interferes with the individual's capacity to process systematically, so message repetition is posited to enhance it. Extrapolating from the most general finding in the literature, namely that repetition of a persuasive message first increases and then decreases agreement (e.g., Calder & Sternthal, 1980), Petty and Cacioppo (1986a) propose that repeated presentation of a message will afford the recipient greater opportunity to assess the worth of the message content. Once the message has been evaluated, however, further repetition will result in boredom and a reactance, both of which will serve as negative cues and so bring about an unfavourable shift in the recipient's evaluations.

According to the ELM, then, variables in the communication context can be directly manipulated to enhance or erode an individual's motivation and ability to systematically and objectively evaluate the information presented. Assuming that these contextual variables have been manipulated so as to maximize elaboration likelihood, the model goes further to propose that the nature and direction of an individual's cognitive evaluation can be influenced by the manipulation of message content or argument quality.

Affecting Argument Quality. The significance of argument quality to attitude shift has already been alluded to in the context of the distraction-disruption hypothesis. According to the ELM, the interaction between argument "strength" and distraction effects is a critical determinant of final attitude change. Specifically, the negative persuasive impact of a "weak" argument will, with distraction, be moderated so that persuasion is enhanced, while conversely the positive persuasive impact of a "strong" argument will be eroded. These predictions rest entirely, of course, on the definition of argument strength presented in the model. Reducing the many elements of a persuasive communication, such as source credibility and repetition, to argument which is effective in its persuasive intent and argument which is not, Petty and Cacioppo (1986a, at p.32) define a strong argument as "one containing arguments...such that when subjects are instructed to think about a message, the thoughts that they generate are predominantly favourable". A weak argument, conversely, is one in which "the thoughts that [subjects] generate are predominantly unfavourable". Given a strong argument, together with the motivation and the capacity to process it, therefore, the ELM predicts a positive attitude shift which will be both relatively enduring and resistant to counter-persuasion.

Threat Appeals and the ELM.

Threat and Persuasion. Research into the use of threat, or fear, appeals in persuasive communication has been considerable (For reviews see Higbee, 1969; Sternthal & Craig, 1974; McGuire, 1985). Recourse to such appeals as a persuasive strategy has been equally extensive, and has been particularly evident in preventive health education. Certainly the current media campaign with respect to AIDS is no exception in this regard. The enduring assumption apparently motivating the use of threat appeals by health educators, among others, has been that if people can be

frightened sufficiently by the consequences of not conforming to a desired standard of practice, their attitudes and, thus, their behaviour will be modified. The persistence of this assumption is perhaps surprising given its mixed reception in the accumulated literature. At the very least, it is apparent that substantive generalization about the effectiveness of the threat appeal as a persuasive strategy is difficult.

Contrary to popular expectations concerning the persuasive effectiveness of threat appeals, early studies found a negative relationship between the level of threat and persuasion (e.g., Janis & Feshbach, 1953). The inverse nature of the relationship was explained in terms of tension arousal. The latter, being aversive, would be avoided and if necessary the threatening advocacy discounted. The rationale is stated simply: "strong appeals to fear, by arousing too much tension in the audience, are less effective in persuasion than minimal appeals." (Berelson & Steiner, 1964, cited in Higbee, 1967).

Support for this hypothesis in subsequent studies, however, has been mixed. Some findings are consistent with the inverse relationship hypothesis, others indicate no relationship at all while many others have found a direct positive relationship (Higbee, 1969; McGuire, 1985). The prevailing view seems now to be that while threat appeals may discourage unwanted behaviours, they may also have the counter-productive effect of arousing in the message recipient a defensive rejection of the message content (McGuire, 1985). The inconsistent and typically antagonistic nature of past findings have given rise to the intermediate view that for maximum persuasive impact and behavioural compliance, the level of threat in a communication should be moderate rather than extreme (McGuire, 1969, cited in McGuire, 1985). Because, moreover, additional variability in the persuasive impact of a communication has been found to be related to the presence or absence in the

advocacy of strategies for avoiding the threatened consequences, it is suggested that fear appeals should be avoided where appropriate preventive actions are not outlined (Leventhal, Singer & Jones, 1965).

Clearly, then, the fear-persuasion relationship is complexly mediated and prediction as to the persuasive impact of a threat appeal is difficult. What can be said, however, is that fear-arousing communications *may* produce an immediate intention to comply with the advocated behaviour, and even actual compliance, but their efficacy is less relative to appeals which outline positive means of avoiding danger.

Fear Arousal. While there are several, sometimes inconsistent, theoretical explanations for the differential impact of fear-arousing communications, there is general agreement as to the those techniques and variables which are effective in bringing about a fear reaction in message recipients. The most frequently employed means is that of establishing an association between non-compliant behaviour and aversive physical consequences. The strength of that association is then mediated by a number of variables, the most significant of which are source credibility and personal relevance (Sternthal & Craig, 1974). Thus, a believable threat of personal harm as a probable consequence of indulging in a particular behaviour should suffice to arouse an affective reaction in the message recipient. The strength of that reaction will be determined by the degree of threatened harm and the likelihood of its occurrence.

Fear and the ELM. The status of affect as a peripheral cue has already been touched upon. The association of an attitude object with an aversive stimulus, for example, is posited to trigger an affective reaction which may be sufficient to determine attitude in the absence of cognitive evaluation. Affect, however, need not operate solely as a cue to peripheral processing. Although the ELM places emphasis on message content as the principal determinant of a persistent attitude change, it does not discount consideration of affect or behaviour as additional means of establishing worth. Accordingly, people can elaborate not only upon message content, but also upon the feelings engendered by that message. The sole proviso advanced by Petty and Cacioppo (1986a) is that those feelings are perceived by the recipient to be "central to the merits of the attitude object under consideration." (at p.18). Thus, an affective state such as fear might serve as a persuasive argument where the threatened consequences of non-compliant behaviour have personal relevance for the message recipient and the elaboration likelihood is high as a result.. In the absence of motivation or ability to process, however, affect should then operate as a simple affective cue only, enhancing positive attitudes when pleasant in nature and eroding favourable attitudes when unpleasant (Petty & Cacioppo, 1986a).

Despite this potential for both peripheral cues and message content to impact on information processing, Petty and Cacioppo (1986a) discount the potential for an *additive* effect. Consistent with their limited processing capacity hypothesis, they postulate the potential for *independent* effects only. Thus, an individual's anxiety about an issue or an attitude object will impact on that individual's cognitive structure only if it has an objectively valid basis which, when analyzed, will enhance or erode the strength of the argument advanced.

Retrospective.

The Elaboration Likelihood Model of Persuasion, then, is an attempt to comprehensively specify the principal ways in which the complex of variables in the communication process can affect persuasion. It endeavours to provide a coherent basis for analyzing and manipulating persuasive strategies such as threat appeals to achieve attitude change which is both predictable and persistent. It reflects a cognitive analysis of persuasion which assumes that message recipients are limited in their information processing capacity and must, therefore, choose between two processing strategies, the central and the peripheral.

Central route processing involves the systematic cognitive evaluation of message content and is dependent upon the recipient's willingness and ability to process. Given a strong or favourable advocacy together with the motivation and capacity to evaluate it, the predicted outcome is a positive shift in the recipient's attitude which is relatively persistent, resistant and predictive of behavioural change. Peripheral route processing, by contrast, occurs when the motivation or ability to process is low. Any attitude change arrived at via this route is determined by cues in the persuasion process alone and is predicted to be relatively transient in nature, open to counter-persuasion and unpredictive of future behaviour.

How valid is this conceptualisation of persuasion and of what practical utility is it in the development of effective persuasive strategies? These questions are considered in the context of current public education efforts to restrict the spread of AIDS. The central assumptions of the ELM are applied in an experiment intended to induce a positive and persistent shift in subjects' attitudes toward AIDS victims and homosexuals.

The choice of experimental context was not determined solely by the topicality of the AIDS issue. Certainly, that issue has relevance for this study given the now more urgent need for a reliable effective persuasive strategy, but of particular interest is the high degree of alarmism typical of traditional preventive health campaigns which has surrounded the issue. Not only does the study present an opportunity to test the ELM against the relatively confused and "naturalistic" background, therefore, it also affords an incidental opportunity to consider the persuasive impact of fear-arousing peripheral cues in inducing persistent attitude change. The undesirability of stereotypic beliefs about AIDS as a "homosexual's disease", and the equally unhelpful attributions of depravity to AIDS victims, moreover lends this area of study additional intrinsic interest. In the latter regard a possible relationship between negative attitudes toward AIDS victims and negative attitudes toward homosexuals is also touched upon.

Before outlining the specific hypotheses to be examined in this study it would be helpful to briefly describe some of the extant research into attitudes toward homosexuality. An understanding both of people's perspectives toward homosexuality and of the variables considered influential in determining those perspectives is, clearly, essential to any attempt to induce attitude change. The possible relevance of explanations of anti-homosexual perspectives for negative attitudes toward AIDS victims is also addressed.

Attitudes Toward Homosexuals.

Unfavourable attitudes toward lesbians and gay men have been variously described as "heterosexism" (Morin & Garfinkle, 1978), "homonegativism" (Hudson & Rickets, 1980) and "homophobia" (Weinberg, 1972, cited in Herek, 1984). The terms reflect

as much the political perspectives of homosexuality as the theoretical. Some writers attribute unfavourable attitudes to the social context in which they occur, while others argue that such attitudes have their genesis in the irrational fears of the individual. Others still have developed more of an umbrella perspective, acknowledging the multiplicity of situational and dispositional variables which mediate people's reactions to homosexuals and homosexuality.

Despite considerable empirical research into individual and group attitudes toward homosexuals over the past two decades, there has been little comprehensive effort to integrate experimental findings into a general theoretical framework against which the formation , maintenance and modification of people's attitudes can be examined. One such framework is, however, outlined by Gregory Herek (1984).

Taking the functional view of attitudes as strategies for meeting psychological needs propounded by Katz (1960), Herek argues that the individual's attitude toward homosexuals can be distinguished according to the social psychological functions they serve. He specifies three attitude types. The first, "experiential attitude", according to Herek develops as a means of defining and categorizing social reality by generalizing from specific interactions with homosexuals. The second, "symbolic attitude", is derived from abstract ideological concepts central to the individual's concept of self. This attitude type helps the individual affirm his or her personal identity and place in relation to valued social reference groups. Characteristically negative attitude reactions of this type are underscored by the sense that cherished personal values are being violated. The third and final attitude type described by Herek (1984) is "defensive" in nature and purportedly has its origins in the individual's need to cope with inner conflicts and anxieties by projecting them onto homosexuals. Reflecting the psychodynamic view that prejudicial attitudes serve to

reduce the tensions aroused by unconscious conflicts, this attitude type is posited where, for example, the individual is ambivalent about his or her own sexuality. The feelings thus engendered may be in conflict with that individual's self-perception and in such a case the expedient of responding negatively toward homosexuals may be adopted as a means of externalizing that conflict and , thus, reducing the anxiety associated with it.

Of the three attitude types it is the latter which Herek (1984) represents as being most resistant to change. Citing the research of Katz et al.,(1956; 1957) he argues that defensive attitudes are unlikely to be open to influence when defensiveness is other than moderate or low. Even then, only through the arousal of an individual's insight into their own defensive mechanisms is that influence likely to be of any real effect. The minimization anxieties about homosexuals and homosexuality, and the promotion of self-knowledge are, therefore, critical to any persuasive strategy aimed at effecting a positive attitude shift.

Although the notion of ego defense might be challenged along with the psychoanalytic paradigm of which it forms a part, it nonetheless provides an explanation for the apparent increase in "homophobic" attitudes which have arisen in the face of the AIDS crisis. Because, moreover, the concept is not restricted just to those anxieties engendered by homosexuals, it might also be used as an explanation for the reported negative reaction to AIDS victims (Chetwynd, 1987). Specifically, anxieties about AIDS may well give rise to unfavourable attitudes toward those suffering the disease as a means of externalizing and , thus, reducing those anxieties.

As a final observation from the research into antihomosexual attitudes, the relatively consistent gender differences in both the direction and the intensity of those attitudes

should be noted. The literature indicates that heterosexuals tend to have more negative attitudes toward homosexuals of their own sex and, as a corollary, more negative attitudes tend to be manifested toward homosexuals generally by males than females (Herek, 1984). The magnitude of the attitude difference, however, has been found to vary with the size of the population sample (Kite, 1984) and, in view of this, the role of gender as a predictor of antihomosexual attitudes is inconclusive. The evidence is nonetheless suggestive and such a difference might reasonable be expected in this study. Given, moreover, the apparent identification of AIDS with male homosexuals, it might also be expected that males will be less sympathetic in their attitudes toward AIDS victims.

Hypotheses.

The principle object of this study, then, is to test whether central route processing is capable of inducing attitude change which is more persistent over time relative to the alternative peripheral processing route to persuasion. This hypothesized differential will be tested by applying the principles of the ELM in an attempt to improve subjects' attitudes toward AIDS victims and homosexuals. As an incidental object, the possibility of gender differences in those attitudes will be examined.

In general terms it is expected that if the assumptions of the ELM hold true, subjects who are encouraged to elaborate (i.e., process centrally) will form attitudes which are more persistent than will subjects who have been distracted from systematic evaluation of the persuasive message. If, in addition, subjects are presented with the same strong argument, in the presence or absence of distraction, the improvement in their attitudes should be approximately equal when measured immediately after the argument presentation.

Further, because subjects are assumed to be limited in their choice of processing strategies, those who are exposed to a strong affective stimulus (fear-arousing peripheral cue) and are then encouraged to elaborate on an argument (central cue) will process centrally. The affective cue will either be diminished in its relative importance as a result of the elaboration or, if it is perceived by the subjects to be critical to the merits of the argument, it may serve as a persuasive argument. In either case the peripheral route to persuasion will not be followed and persistent attitude change should follow on that.

Although Petty and Cacioppo (1986a) specifically discount the possibility of an additive effect for a strong peripheral cue and a persuasive advocacy, given the potential for the former to serve as an additional persuasive argument reinforcement of the persuasive effect is expected. The magnitude of the attitude change should be increased as a result.

With respect to gender, a sex difference in obtained attitude values is expected consistent with the prevailing finding in the literature that males are less favourable in their attitudes toward homosexuals than females (Herek, 1984; Kite, 1984). Given, further, the suspected general identification of AIDS with homosexuals it is also expected that males will be less favourable toward AIDS victims.

The specific experimental hypotheses are, therefore, as follows:

> [1] When measured immediately following the experimental manipulations, subjects attitudes toward AIDS victims and homosexuals will, over all conditions, be significantly more favourable than those of the experimental control.

[2] Subjects exposed to the written advocacy (the "Elaboration Condition") and those exposed to fear arousing material *as well* as the written advocacy (the "Fear and Elaboration Condition") will process centrally. They will, as a result, be significantly more likely to maintain any induced attitude change over time.

[3] The attitude change induced in subjects in the mixed "Fear and Elaboration Condition" will be the most persistent and positive relative to other experimental conditions.

[4] There will be a significant main effect for gender, with males showing less favourable attitudes toward both homosexuals and AIDS victims. A high positive correlation between subjects' scores on the respective attitude measures is predicted.

CHAPTER 2

METHOD.

The experiment was designed to assess the relative influence of peripheral versus central route processing of communications concerning AIDS. The impact of a fear provoking video-taped lecture and slide presentation was contrasted with that of a dispassionate, written presentation and discussion. The former was devised as a cue to peripheral route processing, while the latter was intended to function as a central route processing cue. The persuasive effect of these alternative approaches was measured using questionnaires which were intended to provide information concerning subjects' emotional reactivity to the fear arousing communication, and changes over time in their attitudes and beliefs with respect to AIDS victims and homosexuals.

Subjects.

A total of 238 subjects participated in the study. They were drawn from two sources. Two hundred and four subjects, representing four introductory classes in psychology were recruited from among undergraduate students enrolled at the University of Canterbury. Of these 124 were female and 80 were male. A further 34 subjects were recruited from among out-patients receiving treatment at the Sexually Transmitted Diseases Clinic (STDC) of Christchurch Hospital [Appendix I]. Of these additional subjects 17 were female and 17 were male. All subjects were volunteers.

The sample of undergraduate students was divided into groups on the basis of existing laboratory class membership. Subjects drawn from among hospital out-patients were treated as a discrete group and served as one of the two experimental controls. The resultant five groups were of variable size, ranging in number between 34 and 56 subjects. The distribution of subjects by gender across the experimental groups is summarized in Table 1.

Table 1.

SEX	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	ROW TOTAL
MALE	21	16	14	29	17	97 40.8%
FEMALE	35	31	42	16	17	141 59.2%
COLUMN TOTAL	56 23.5%	47 19.7%	56 23.5%	45 18.9%	34 14.3%	238 100.0%

Settings and Personnel.

The experimental treatments and research questionnaires were administered during subjects' normal class hours or, in the case of the STDC sample, during scheduled hospital appointments. All manipulations were carried out in a first year student laboratory, which served as the experimental setting for the duration of the study. In addition to the author, who served as the experimenter, a male confederate was recruited to assist in the presentation of the fear-arousing materials.

Materials.

The Research Questionnaires. Two questionnaires were administered to each of the five experimental groups. The first consisted of a 21 item scale developed by Kite and Deaux (1986) to assess attitudes toward homosexuality [Appendix II]. Items reflect a range of attitudes, beliefs and concerns about homosexuals and require respondents to indicate, on a five point Likert-type scale, their level of agreement or disagreement with each of the statements made. Responses are aggregated to produce a range of scores between 15 and 105, a score of 15 indicating an extremely negative attitude toward homosexuals, and a score of 105 indicating an extremely positive attitude. No information as to subjects' sexual orientation is sought.

The Kite Homosexual Attitude Scale (KHAS) has been extensively tested with student populations and has both high internal consistency (alpha = .93) and good test-retest reliability (r = .71). It was assumed for the purposes of the present study, therefore, that there would be negligible problems of comprehension, reliability or validity with any of the scale items.

The second questionnaire consisted of a scale devised by the author to assess attitudes toward AIDS victims. In the construction of that questionnaire an initial pool of 20 items was generated, consisting of statements reflecting a variety of stereotypic attitudes, beliefs and anxieties about AIDS [Appendix III]. As with the KHAS, respondents were required to indicate on a five point scale their level of agreement or disagreement with each of the statements presented.

The 20 items were administered to an additional sample of 63 undergraduate student volunteers (43 female; 20 male). Responses were anonymous. Respondents were asked to comment on the clarity of the scale items and how well they felt their attitudes had been assessed. Questionnaire responses were analyzed to obtain preliminary reliability and validity data [Appendix IV]. Due to low item-total correlation and ambiguity of wording five of the 20 items were excluded from the final scale.

The revised Attitudes to AIDS Victims Scale (AAVS) consists, therefore, of 15 items. Six of those items are worded positively, or in terms favourable to AIDS victims, while the remainder are worded negatively. Responses to the positive items are reverse scored to produce a scoring range of 15 (unfavourable attitude) to 75, (favourable attitude). The scale has good internal consistency (alpha = .75) and respondents in the preliminary survey commented favourably on the clarity of the items retained. Again, no problems of validity or comprehension were anticipated in applying the scale to the experimental sample.

In addition to the two principal questionnaires a third research instrument was administered to those experimental subjects exposed to the fear-arousing communication [Appendix V]. This consisted of a brief questionnaire, or " Fear Index", adapted from a similar instrument devised by Janis and Feshbach (1953). The index was intended to assess subjects' affective reactions to the materials presented and required them to indicate, according to a forced-choice format, their feelings during the presentation . Subjects were also required to indicate on a scale of one to ten the degree to which the communication was effective in provoking a fearful reaction.

The Persuasive Communications. [Appendix VI] The same essential information concerning the epidemiology and spread of AIDS was presented to subjects in two different forms. The first consisted of a 20 minute video-taped lecture which was intended to arouse strong fear reactions, and to act, thereby, as a peripheral processing cue. The lecture was purported to be one of a series on the subject of AIDS given at the Otago Medical School in March, 1987. The lecturer, a 36 year old confederate of the experimenter, was represented as a visiting expert and researcher in immunology currently working with the Federal Center for Disease Control, Washington D.C. The lecturer's heavy Scots accent was accounted for by a brief and fictitious personal history which had him recruited to the FCDC from the University of Edinburgh Medical School. This added some credibility to his purported status as "visiting expert". The presentation was comprised of material drawn from "A Colour Atlas of Acquired Immunodeficiency Syndrome" (Farthing et al., 1986) and from media reports published in the two months preceding the experiment. It was supplemented by a series of 24 slides which were shown on a separate screen in prearranged sequence to illustrate the each of the points being made. The slides were obtained from the Sexually Transmitted Diseases Clinic of Christchurch Hospital and depicted a range of both chronic and acute physical conditions associated with AIDS. Interspersed among them were a number of graphs showing the growth in identified cases of AIDS, both internationally and in New Zealand since 1984.

The second communication consisted of a two page, type-written presentation adapted from " In Point of Fact" (March, 1987), a monthly publication of the World Health Organisation, and an information leaflet published by the New Zealand AIDS Foundation. It described, in objective and impersonal terms, the epidemiology and risk categories for AIDS, and drew particular attention to practices effective in

preventing further spread of the disease. Presented to subjects in conjunction with issue-relevant discussion, the communication was intended to promote central route processing of the information thus conveyed.

Apart from the alternative media channels used, the two communications differed primarily in the amount of fear arousing material which they contained. In contrast to the written materials, the video-taped presentation stressed the debilitating, painful and ultimately fatal nature of the many infections and sarcomas associated with AIDS. Descriptions of each of these AIDS-related illnesses were graphically reinforced by the accompanying slide material. The relevance of these physical dangers for the subject audience was promoted by the use of personalized language and emphasis was placed on the susceptibility of both homosexuals *and* heterosexuals to the disease. Because of the importance of source credibility in moderating the fear of physical consequences, moreover (McGuire, 1985), the status of the "lecturer" in the video-taped presentation as an expert in the area of immunology was stressed.

Despite the evident differences in the two communications, both were intended to promote more positive attitudes toward AIDS victims and homosexuals. To ensure that the arguments were "strong" in terms of the Petty and Cacioppo (1986a) definition, both communications were submitted for assessment to a panel of five independent judges. Those judges were asked to rate the communications as either "strong", "moderately strong" or "weak". All but one considered the messages to be "strong" and, therefore, likely to promote favourable attitude shift . The exception was with respect to the fear-arousing material, which was rated as "weak" when viewed in isolation from the written advocacy. Because subjects exposed to the threat appeal were also to be presented with the written materials, however, the demurral was not considered problematic. Having due regard, moreover, to experimental

findings in which the persuasive efficacy of a threat appeal could be increased by the presentation of strategies for avoiding aversive consequences (Leventhal, Singer and Jones, 1985; McGuire, 1985), the content of the written message had been tailored accordingly.

Because subjects in the peripheral processing condition were to be presented with both communications, there was a clear need to ensure that the written advocacy did not *inappropriately* function as a cue to central route processing and thus confound the experiment. For this reason a distraction exercise was prepared.

Distraction Exercise.

As previously noted, distraction has been shown to be an effective expedient for preventing detailed evaluation of message content (e.g., Baron, Baron & Miller, 1973). Consistent with the usual format of such exercises, subjects in the peripheral processing condition were confronted with a task intended to occupy both their attention and their cognitive capacity and thus disrupt their evaluation of the experimental advocacy.

The distraction exercise involved the completion of the Revised Wecshler Adult Intelligence Scale (WAIS-R) which was presented to subjects immediately following exposure to the threat appeal. Materials necessary to the completion of the picture arrangement, picture completion and block design subtests of the WAIS-R performance scale were omitted. The exercise was of 15 minutes duration.

The Research Design.

The study employed a mixed multifactorial design with repeated measures. Three independent variables were involved: the sex of the subject, the treatment condition and the repeated measures.

There were four treatment conditions. These were arbitrarily assigned to the five experimental groups. The first involved the presentation of the fear-arousing communication, or threat appeal. This was intended to function as a peripheral cue. Although administered in conjunction with the written advocacy, in this condition the communication was also followed by the distraction exercise intended to prevent subjects from elaborating upon the information presented. For ease of description the treatment was labelled the "Fear Condition".

The second experimental condition involved a repetition of the first, but with the distraction exercise omitted. In its stead subjects were required to participate in a structured discussion of the material presented and list, in order of subjective importance the risk categories for AIDS and five preventive practices effective in preventing contraction of the disease. The exercise represented a highly simplified version of the thought-listing technique pioneered by Brock (1967) and Greenwald (1968, cited in Petty & Cacioppo, 1986a). It was intended to enhance subjects' ability to systematically evaluate, or elaborate upon the two communications and thereby act as an additional central processing cue. This condition was labelled the "Fear and Elaboration Condition".

The third condition involved presentation of the written communication only. Again subjects were required to participate in structured discussion. In the absence of the strong peripheral cue (the threat appeal), the treatment was intended to promote detailed cognitive scrutiny of the advocacy and thus function as a central processing cue. For the sake of description this condition was labelled the "Elaboration Condition".

The final condition involved the presentation of the two attitude measures in the absence of any experimental manipulations. This control condition was assigned to the two remaining experimental groups, one of which was comprised of the sample of STDC outpatients. The two groups were distinguished as the "Control" and the "STDC Control".

The allocation of treatments to groups is summarized in Table 2.

Table 2.

Treatment Allocation by Experimental Groups.

Group	Condition
1	**Fear (Peripheral Cue).**
2	**Fear & Elaboration (Central Cue).**
3	**Elaboration (Central Cue).**
4	**Control.**
5	**S T D C Control.**

The KHAS and the AAVS were administered to all groups immediately after the initial experimental manipulations. They were then administered a second time, four weeks after the experimental session. Because of the unavailability of the subjects in the STDC Control, the latter was omitted from this second post-testing.

Ethical Considerations.

A number of ethical considerations arose in relation to the experimental manipulations. In the Fear Condition and the mixed Fear and Elaboration Condition, in particular, the possible provocation of an antagonistic or negative response on the part of subjects was of concern. Given the nature of the issues involved and the potentially serious consequences of subject reactance, professorial permission was sought before proceeding with the study.

In the recruitment phase of the study, which took place two months before the actual experiment, subjects were advised in general terms of the object of the exercise and the voluntary nature of their participation. At the close of the experimental sessions themselves subjects were also advised that if any concern, anger or distress had been engendered by the presentation they should approach the experimenter. A debriefing session was also arranged. As a further precaution the completion of the study was scheduled to coincide with a nation-wide awareness campaign on the subject of AIDS and its prevention.

Procedure.

Before the commencement of each of the experimental sessions subjects were thanked for their participation. They were advised of the nature and purpose of the experiment in the following terms:

> "The experiment in which you are about to participate is intended to assist in the development of an attitude scale for use with Health Services personnel likely to become involved in the clinical treatment of AIDS victims. You will be presented with a variety of information. You will then be given a number of questionnaires to complete."

Subjects were assured of their anonymity and the administrative necessity for the use of personal codes was explained to them.. They were requested to indicate their gender on each of the facing page of each questionnaire. Following these introductory comments the experiment was begun. The treatment procedures for each of the four experimental conditions are summarized individually below.

The Fear Condition (Peripheral Cue). In this condition the experimenter began by advising the subjects as follows:

> "The video you are about to see was taped in March of this year at the Otago Medical School. The seminar shown in the video was one of several delivered at the School on the subject of AIDS. The speaker is Dr. Deane McKenzie, formerly a lecturer in immunology at the University of Edinburgh and now attached to the Federal Center for Disease Control in Washington. Dr. McKenzie is active in research into the immunological and epidemiological aspects of AIDS. The slides referred to by Dr. McKenzie during his address have been obtained from Otago and will be shown together with the video.

Subject were requested to maintain silence throughout the course of the experiment and the video-taped lecture and the slides were then shown.

Immediately following the presentation the subjects were asked to complete the Fear Index. They were instructed in the following terms:

> "You have have been given a short questionnaire which asks you to describe your feelings during the video and slide presentation. Place indicate your responses by checking the boxes provided. At the bottom of the questionnaire is a one to ten scale which asks you to rate how fear-provoking you found the presentation. One is low, ten is high. Place a circle around the number you consider most appropriate".

Five minutes were allowed for the completion of the index. Subjects were then given the written message and were instructed to read it. A further 10 minutes were allowed for this task.

After 10 minutes had elapsed subjects were quickly divided into pairs and were presented with the WAIS-R. They were given the following instruction:

> "You have in front of you an intelligence test. One of you is to sit the test, while the other of you records the answers. You are to complete the information, digit span, vocabulary and comprehension subtests. Ignore the rest. The score on the test will be determined by the number of correct answers given in a 15 minute period."

Immediately after the completion of this distraction exercise the AAVS and the KHAS were presented. They were labelled "Questionnaire One" and "Questionnaire Two" respectively, the numbers indicating their order of presentation. Subjects' attention was drawn to the written instructions and specimen question on the facing page of each questionnaire. Ten minutes were allowed for the completion of this task.

The Fear and Elaboration Condition. The procedure followed in the first condition was substantially replicated here. However, instead of being required to complete a distraction task (the WAIS-R), subjects were divided into pairs and

instructed as follows:

> "I am interested in your views on the information that you have received over the past few minutes. I would like you to consider the implications of AIDS for New Zealand and New Zealanders and to examine particularly the risk categories for AIDS and how general that risk now is. Discuss your opinions with the person sitting next to you and then list, in order of importance, five practical means of preventing the spread of the disease."

Fifteen minutes were allowed for the completion of this exercise. At the end of that period the AAVS and the KHAS were administered as for the Fear Condition.

The Elaboration Condition. All reference to the video-tape and the slide presentation was omitted. Following the experimenter's introductory comments subjects were presented with the written message only. They were instructed to read the materials. From that point the procedure followed in the Fear and Elaboration Condition was replicated.

The Control Groups. Following the normal introductory comments as to the purpose of the experiment and the anonymity of responses, subjects in the control groups were presented with the attitude measures only. In the case of the STDC Control those measures were presented once only.

On completion of the experiment subjects were thanked for their participation and were advised of arrangements for a debriefing session which was held in the week following the second attitude assessment. An invitation was issued to anyone who had particular concern about the experiment to approach the experimenter. In response one female subject in the Fear Condition expressed distress at the nature of the material shown. She withdrew from further participation in the study. Her responses to the questionnaires were discounted.

CHAPTER 3

RESULTS.

Affect Arousal [Appendix VII]

Subjects' responses to the Fear Index were aggregated to determine whether the video-taped lecture and the slide presentation (the threat appeal) had been successful in provoking an affective reaction. The results, summarized in Table 3, provide evidence of strong emotional tension having been aroused in those exposed to the communication. Feelings of alarm and disturbance at the nature and the spread of AIDS were general. The intensity of those feelings was, moreover, typically high. Anxiety at the potential for contracting AIDS was not as pronounced, but a high level of concern was nonetheless reported by over half of the respondents.

Table 3.

Affective Reactions to Fear Stimulus Expressed as a Percentage of Total Responses.

Indices.	Condition 1. (N=47)	Condition 2. (N=56)	Total Sample (N=103)
1. ***Alarm*** **at spread of AIDS.**			
High - Extreme	**89.3%**	**85.1%**	**87.4%**
Low - Moderate	**10.7%**	**14.9%**	**12.6%**
2. ***Disturbance*** **at the range and nature of symptoms.**			
High - Extreme	**96.4%**	**87.2%**	**92.2%**
Low - Moderate	**3.6%**	**12.8%**	**7.8%**
3. ***Anxiety*** **at the possibility of contracting AIDS.**			
High - Extreme	**51.8%**	**51.1%**	**51.4%**
Low - Moderate	**48.2%**	**48.9%**	**48.6%**

Additional evidence of the effectiveness of the threat appeal in provoking a specifically "fearful" reaction is provided by subjects' evaluations of the video and slide material on the ten-point scale accompanying the Fear Index. The results are summarized in Table 4. The nature of subjects' responses supports the conclusion that the threat appeal functioned as an strong affective and, thus, peripheral cue.

Table 4.

Subject Evaluation of the Threat Appeal as Fear-arousing Stimulus, Expressed as a Percentage of Total Responses.

Scale Ratings.	Condition 1. (N=47)	Condition 2. (N=56)	Total Sample. (N=103)
High (8-10)	64.0%	73.0%	69.0%
Mod. (5- 7)	34.0%	27.0%	30.0%
Low (1- 4)	2.0%	-	1.0%

Attitude Manipulations.

A three factor multiple analysis of variance (MANOVA) was employed to assess the influence of the experimental treatments (Condition), the repeated measures (Test) and gender difference (Sex) on subjects' attitudes toward AIDS victims and homosexuals. Because of the absence of a repeated measure for the STDC Control, this group was excluded from the analysis.

Significant main effects were found for each of the three experimental factors as measured by the AAVS and the KHAS. The results for each of these attitude measures are discussed separately below together with details of additional relevant analyses undertaken.

Attitudes Toward AIDS Victims. [Appendix VIII] Analysis of subjects' responses to the AAVS on the MANOVA revealed significant main effects for Condition, [$F(3,195) = 3.726$, $p<.05$], Test [$F(1,195) = 45.405$, $p<.01$] and Sex [$F(3,195) = 5.526$, $p<.01$]. No significant interaction effect was found.

In the case of Condition, the mean attitude scores for each of the experimental groups shows that subjects presented with the the written message and engaged in subsequent issue-relevant discussion (the Elaboration Condition) were the most positive, or favourable, in their attitudes toward AIDS victims over the first and the second post-testings. By contrast, those subjects exposed, in addition, to the threat appeal (the mixed Fear and Elaboration Condition) were least positive in their attitudes, while those who were distracted from a detailed evaluation of the communications (the Fear Condition) fell between the two extremes. In neither of the latter two conditions were the obtained means as great as for the experimental Control. On the first post-testing, moreover, *none* of the treatment means exceeded that of the Control. On subsequent analysis, however, the obtained negative differences did not approach significance and were consequently ignored.

Notwithstanding this variability in the direction of experimental effects relative to the Control group, the evidently persistent persuasive impact of the communications in the Elaboration Condition is, *in isolation,* consistent with the predictions under the ELM (See Table 5 for means).

Less encouraging were the findings with respect to the repeated measure, or Test variable. Specifically, the general increase in subjects' attitude scores between the first and second post-testings is inconsistent with expectations. The result indicates that, *irrespective* of experimental condition, subjects' attitudes toward AIDS victims

improved over time. Given the prediction that the persuasive impact of the communications in the Fear Condition would deteriorate relative to the other treatment groups, the outcome disconfirms the second experimental hypothesis.

Table 5.

Mean Scores for Treatment Groups on the First and Second AAVS Post-Testings.

Condition.	Test # 1.	Test # 2.
1. Fear.	58.536	61.602
2. Fear and Elaboration.	58.426	59.937
3. Elaboration.	59.315	65.786
4. Control	59.418	63.444
5. STDC Control.	58.265	-
Mean for Total Sample (Excluding STDC)	59.626	62.345

Note. Due to unavailability of subjects in the STDC Control, the AAVS was not administered a second time. Although the scores for this group were not included in the MANOVA, the mean obtained for this group on the initial first post-testing is included for later reference.

More consistent with predictions was the obtained main effect for Gender. The mean attitude scores for males and females (see Table 6) revealed that males were typically less favourable toward AIDS victims across all experimental conditions on both first and second post-testings. Only in the control group on the second post-testing was there any deviation from this pattern. In that instance the mean attitude score for males was greater than for females. The magnitude of the effect, however, was negligible and because no significant interaction effect for Sex and Condition was

revealed, the finding appeared to be aberrant and did not detract from the general finding that female subjects were more favourable in their attitudes toward AIDS victims than their male counterparts. In this regard the fourth experimental hypothesis was confirmed.

Table 6.

Mean AAVS Scores for Males and Females Across Condition and Test.

Condition .	Test # 1.	Test # 2.
1. Fear		
Male	56.095	59.333
Female	60.000	62.971
2. Fear and Elaboration		
Male	55.000	56.125
Female	60.194	61.935
3. Elaboration		
Male	61.143	62.143
Female	62.238	67.000
4. Control		
Male	60.393	63.929
Female	62.238	62.188
Total Sample Mean		
Male	58.291	60.382
Female	60.476	63.524

Despite the apparently greater positive effect of the Elaboration Condition upon subjects' attitudes over time, therefore, the results of the experimental manipulations offer, at best, limited support for the ELM. This becomes even more evident when the findings are analyzed more closely.

To begin with, a one way analysis of variance on the results obtained from the first post-test indicated no significant difference in subjects' attitude scores [F(3,199)=2.513,p<.0597]. Moreover, an a priori planned comparison (see Appendix VIII), used specifically to test the first experimental hypothesis , revealed the absence of any significant difference between each of the treatment conditions and the Control [t (199)=0.247,p<.805]. This result was inconsistent with predictions and the first hypothesis was disconfirmed accordingly.

A similar a priori planned comparison across experimental conditions reveals that subjects' attitude scores in the mixed Fear and Elaboration Condition differ significantly from those in the Elaboration Condition [t (200)= -3.422, p<.01]. Of itself the finding of a significant difference is not inconsistent with the expectations of the ELM. However, an examination of the mean attitude scores for the two conditions (see Table 5), indicates not only a difference in the magnitude of the scores but also a difference in their *direction*. Far from having the most positive and persistent impact on subjects' attitude scores, the Fear and Elaboration Condition demonstrably had the least positive persuasive effect of all the experimental conditions. Again, the result was inconsistent with predictions and the third experimental hypothesis was disconfirmed accordingly.

Given these outcomes a Scheffe test was conducted to determine specifically which pairs of experimental groups differed significantly on the second post-test (see Appendix VIII). The test revealed that scores in the Elaboration Condition differed significantly from those in both the Fear and the mixed Fear and Elaboration Conditions [F(3,200)=5.503,p<.01], but again not from those in the Control. Interestingly the obtained difference between the scores for the Fear and the Fear and Elaboration Conditions did not approach significance.

To assess the relationship between the STDC Control and the main experimental groups, a number of *t*- tests were conducted [Appendix IX]. Because subjects in the STDC Control were tested only once, comparisons were restricted to the first post-test only.

Comparing, firstly, the STDC Control with the main experimental Control , no significant difference was found in the obtained scores [t (76)=0.61.p<.547]. With respect to Elaboration Condition, however, a significant difference was revealed [t(88) =2.09,p<.05], the means (see Table 5) indicating that subjects in the that condition were more positive in their attitudes than those in the STDC Control. This was in contrast to the obtained variation in the scores between the main Control and the Elaboration Condition. No other significant differences were found and, therefore, no additional support is given to the assumptions of the ELM.

Despite the different population from which the STDC Control was drawn the responses were not very dissimilar from Control group. To that extent, the possibility of the experimental findings being generalizable beyond an undergraduate student population is suggested.

Attitudes Toward Homosexuals. [Appendix X] The same three factor multiple analysis of variance (MANOVA) used to assess the effects of Condition, Test and Sex upon subjects' attitudes toward AIDS victims was also used to assess the influence of those factors upon attitudes toward homosexuals. Again, the STDC Control was excluded from the analysis.

Significant main effects were found for Condition [F(3,195)=3.726, p<.05], Test [F(1,194)=16.596,p<.01] and Sex [F(1,195)=5.526, p<.05]. No significant interaction effect was revealed. For all factors the observed effects were similar to

those found in the AAVS analysis.

In the case of Condition, the mean attitude scores (see Table 7) for each of the treatment groups showed that the Elaboration Condition was, again, most effective of all in enhancing positive and persistent attitudes toward homosexuals over time. As for the AAVS, the mixed Fear and Elaboration Condition was least effective in its persuasive impact, while the Fear Condition was of intermediate effect. In this instance only in the Fear and Elaboration Condition did the mean attitude scores on the first and second post-tests fail to exceed those of the Control.

Table 7.

Mean Scores for Treatment Groups on the First and Second KHAS Post-Testings.

Condition.	Test # 1.	Test # 2.
1. Fear.	79.757	82.200
2. Fear and Elaboration.	76.095	78.982
3. Elaboration.	86.238	88.286
4. Control	77.721	80.110
5. STDC Control	77.147	-
Mean for Total Sample (Excluding STDC)	79.392	83.688

In the case of the repeated measures, or Test variable there was an overall increase in scores between the first and second post-testings, indicating improvement in subjects' attitudes toward homosexuals irrespective of the experimental treatment. Consistent

with this, scores for the Control also improved over time. Once again the outcome is contrary to expectations flowing from the second experimental hypothesis.

With respect to Sex the expected gender differences in subjects recorded attitudes were obtained. Again as for the AAVS, the mean attitude scores for males and females (see Table 8) showed that male subjects were less favourable in their attitudes toward homosexuals than females. The same deviation observed with the AAVS, was also observed for the Control on second post-testing. Here males were more sympathetic toward homosexuals then females. For the reasons already described in the context of the AAVS, the deviation was ignored. It was sufficient to note that the predicted sex difference, and thus the fourth experimental hypothesis, were confirmed.

Table 8

Mean KHAS Scores for Males and Females Across Condition and Test.

Condition .	Test # 1.	Test # 2.
1. Fear		
Male	76.286	78.286
Female	83.229	86.114
2. Fear and Elaboration		
Male	70.500	74.688
Female	81.690	83.279
3. Elaboration		
Male	83.375	85.714
Female	89.199	90.857
4. Control		
Male	77.379	81.345
Female	78.063	78.875
Total Sample Mean		
Male	76.880	80.008
Female	83.025	84.780

Despite the overall similarity of these results with those obtained for the AAVS there were notable differences. Firstly, with respect to the initial post-test, the same a priori planned comparison used with the AAVS to test the first experimental hypothesis was applied to the KHAS. As for the AAVS, the magnitude and direction of that difference in subjects' attitude scores were found to be inconsistent with predictions. However, a one way analysis of variance showed that in contrast to the AAVS, the difference was significant [$F(3,198) = 5.280, p<.05$]. A Scheffe test, revealed the source of that difference,moreover, as being between the Elaboration and the mixed Fear and Elaboration Conditions, and the Elaboration Condition and the Control. With respect to the latter at least the outcome was more consistent with the experimental expectations.

Further, although like the AAVS a significant difference was found between attitude scores on the second post-test [$F(3,200)=5.185, p<.01$], an additional Scheffe test revealed that in contrast to the AAVS, the Elaboration and Control Groups were significantly different at the .05 level.

However, although these results are somewhat more in keeping with the experimental hypotheses, critical inconsistencies nonetheless remain apparent. An a priori planned comparison of attitude scores on the second KHAS post-test, for example, shows that while attitude scores in the Elaboration Condition are significantly different from those in the Control, they also differ in magnitude *and direction* from those in the Fear and Elaboration Condition [t (205) = -1.973, $p<.05$] . This is contrary to the relationship predicted between the two by the second and third experimental hypotheses. The overall improvement in subjects attitude scores on the KHAS between first and second post-tests is similarly problematic.

With respect to the relationship of the STDC Control to the main experimental groups no significant differences were found, with the sole exception of that between the STDC Control and the Elaboration Condition [t (88)=2.09,p<.05] (see Appendix IX).

The Relationship Between the AAVS and the KHAS.

A Pearsons Product Moment Correlation was employed to assess the degree of relationship, if any, between the scores of the two attitude measures. On the first post-test a positive correlation between measures was found (p=.6953). On the second post-test the obtained correlation was increased (p=.7745). When scores on the AAVS and the KHAS were aggregated across both the first and second post-tests the correlation coefficient was maximized (p=.7775). Given the high and positive nature of this correlation the fourth experimental hypothesis is confirmed.

Conclusion.

The consistency between the hypothesized and the obtained relationship between the two attitude measures notwithstanding, the experimental findings are broadly inconsistent with predictions. Possible explanations for that inconsistency and its implications for the ELM are discussed in detail in the following chapter.

CHAPTER 4

DISCUSSION.

This study was intended to test the central assumptions of Petty and Cacioppo's (1986a) Elaboration Likelihood Model of Persuasion by contrasting the effects of central versus peripheral route processing on the persistence of induced changes in subjects' attitudes toward AIDS victims and homosexuals. It was also intended to establish whether gender was a significant determinant of attitude and whether, in addition, attitudes toward AIDS victims and attitudes toward homosexuals are in any way related.

The results, as we have seen, were mixed. To the extent that subjects in the Elaboration (central route processing) Condition were significantly more favourable in their attitudes over time than subjects in other conditions, the ELM is supported. However, the lack of significant difference in attitudes as measured initially on the AAVS, and the overall improvement in attitude scores on both the AAVS and the KHAS , were inconsistent with predicted outcomes. The fact, moreover, that scores in the mixed Fear and Elaboration Condition differed not only in magnitude but also in direction was also contrary to expectations. Superficially, at least, the validity of the assumptions underlying the ELM was cast into doubt.

More positively, expected gender differences were confirmed, as was the predicted high correlation between attitude scores on the AAVA and the KHAS.

These outcomes and their implications with respect to the ELM are considered in detail in the following sections. Possible explanations for the results obtained are reviewed and the adequacy of this study as a basis for discounting the ELM is examined. The validity of Petty and Cacioppo's (1986a) single processing hypothesis is reassessed in the light of the inconsistent findings presented by this study.

Message Effects.

Having regard, firstly, to the absence of significant difference in the AAVS scores when measured immediately following the experimental interventions, it is apparent that the two communications (the threat appeal and the dispassionate written message) were unsuccessful in inducing any pronounced shift in subject's attitudes, either positive or negative. In contrast the obtained differences in subjects' scores for the KHAS on the first post-testing *were* significant, attitudes in the Elaboration and the Fear and Elaboration Conditions differing both in magnitude and direction relative to the Control. These inconsistent results suggest a differential message effect with respect to subjects' attitudes toward homosexuals, but not with respect to their attitudes toward AIDS victims. In the case of subjects in the Fear and Elaboration Condition, moreover, the evidently less favourable attitudes recorded relative to the Control suggests either that the fear-arousing materials and the written message interacted to produce a negative attitude shift, or in the alternative that the threat appeal constituted, in Petty and Cacioppo's (1986a) terms, a "weak" argument which moderated the positive effects of the more objective advocacy.

Of the two alternatives, the latter is appealing. Certainly in the case of subjects' attitudes toward AIDS victims, the threat appeal was associated with a negative attitude shift over both the first and the second post-testings. That effect was not,

however, consistent for two attitude scales. In the case of the KHAS it was the threatening material of the Fear Condition which, next to the Elaboration Condition, had the most positive persuasive impact, while the combination of messages in the Fear and Elaboration Condition had the least positive impact. While on the face of it this outcome disconfirms the view that the threat appeal constituted of itself a weak argument, the fact that the group differences obtained relative to the Control were not significant for either attitude measure renders the issue inconclusive.

Inferences may, however, be drawn. It is, for example, evident on a review of subjects' responses to the Fear Index that a generally high level of fear was engendered in those who were exposed to the threat appeal. Given the prevailing social psychological view that intermediate versus high levels of fear are counter-productive of attitude change and behavioural compliance (McGuire, 1985), it might reasonably be concluded that the fear-arousing materials constituted a weak rather than a strong persuasive argument as originally intended. Although ostensibly the appeal was couched in terms favourable to the advocacy, if it in fact elicited predominantly unfavourable thoughts it would, according to the ELM, moderate the positive persuasive effects of the written message. Should, moreover, subjects be distracted from scrutinizing the merits of the advocacy (as was in fact the case), attitude shift would be determined by the predominant peripheral cue which here may well have consisted of negative affect. Following the Petty and Cacioppo (1986a), this would result in an erosion of positive persuasion.

Irrespective of Petty and Cacioppo's (1986a) apparently interchangeable use of "weak argument and "counter-argument", the operation of the threat appeal as a negative or unfavourable persuasive cue is problematic for this study since it would not only be contrasting the central and peripheral routes to persuasion, but also strong

and weak message content; something it was not intended to do.

The assumption that the threat appeal elicited predominantly unfavourable thoughts in those exposed to it, still does not adequately account for the negative results obtained in the Fear and Elaboration Condition on both the AAVS and the KHAS. Subjects in this condition were not distracted from a systematic evaluation of the written message, but were, on the contrary, actively *encouraged* to elaborate on the merits of the information presented. According to Petty and Cacioppo (1986a), this should have mitigated the unfavourable impact of the threat appeal, since it should have functioned as an affective and,therefore peripheral, processing cue. Had that assumption held true, then according to the ELM the relative importance of that cue would have been diminished with the increased level of argument scrutiny (Petty & Cacioppo, 1986a) The net effect should still have been a positive and persistent attitude shift.

The only remaining explanation for a contrary (i.e., negative) outcome which still assumes the validity of the ELM, would be that in spite of the enhancement of subjects' ability to evaluate the merits of the communications, they were not motivated to do so. That being the case, the negative peripheral cue would have functioned as the principal determinant of subjects' final attitude leading to the relatively unfavourable attitudes that were obtained.

Although persuasive, the latter explanation necessarily assumes that the components of the persuasion process, which Petty and Cacioppo (1986a) identify as reliably determining subject motivation to process, are in fact not as readily operationalized as is maintained. The expedient of drawing to subjects' attention their own susceptibility to AIDS, irrespective of their sexual orientation, and the use of highly personalized language from an apparently credible source should have been

sufficient to ensure personal relevance and, thus, the motivation to process.

Just as with the question of whether or not the communications constitued strong or weak arguments, however, the issue remains moot, since in view of the lack of significant difference between the Fear and the Fear and Elaboration Conditions relative to the Control, no firm conclusions can be drawn. What can be said, however, is that irrespective of the direction of the obtained differences in attitude scores on the initial post-testing ,the message effects were insufficient to justify anything other than a rejection of the first experimental hypothesis. The fact , moreover, that on the second post-test the Fear and Elaboration Condition had the least persuasive impact permits a rejection of the third experimental hypothesis.

For an explanation of the inconsistency between the hypothesized and the obtained outcomes it seems necessary to look beyond the model of persuasion used to the methodology of the experiment itself. The failure to operationalize adequately the components of the ELM, or alternatively, to control for extrinsic variables may, here, be problematic. However, it should be noted that difficulty of implementation does not point only to inadequate experimental design. It also highlights the apparently intrinsic difficulty of reliably manipulating persuasive variables to bring about a desired outcome. In glossing over this Petty and Cacioppo (1986) may also be glossing over a basic flaw in the assumptions upon which the ELM rests.

Persistence.

With respect to the hypothesized persistence of any induced attitude change, the experimental findings are quite clear. The improvement , irrespective of condition,in subjects' attitude scores on both the AAVS and the KHAS is completely contrary to the central predictions of the ELM. Because Petty and Cacioppo (1986a) talk only

about the persistence of attitude and not about its improvement the outcome is of particular interest.

A number of explanations for this improvement in attitudes over time are possible,many of them related to methodological artifact or extra-experimental factors. The ELM should not, accordingly be dismissed out of hand. To begin with, the distinction between central and peripheral route processing may not have been adequately established. This may have resulted from an absence of adequate motivation on the part of subjects in the Elaboration Condition to systematically evaluate the message. In the alternative it may have followed on a failure of the distraction exercise to prevent subjects in the Fear Condition from elaborating upon the written material presented with the threat appeal. The possibilities are many.

Another possible explanation is that of "experimenter expectancy" (Rosenthal, 1972, cited in Cook & Campbell, 1977). The experimenter's intent and expectations may have been communicated to subjects with a resultant confounding of the experimental findings. This possibility is a real one, particularly given the comment by one subject following the second administration of the attitude scales to the effect that participants in the experiment were being "checked out to see if they thought any differently". In the context it would not be surprising if subjects had concluded that the expected difference involved an improvement in their previously recorded sympathies.

The most interesting possibility in terms of challenge to the comprehensiveness of the ELM, however, is that represented by the "sleeper effect" , or more formally the "dissociative cue hypothesis". This effect was first described by Hovland, Lumsdiane and Sheffield (1949) as involving an increase in persuasion over time that may occur when a message is initially paired with a suspect source or other discounting cue

which impairs the persuasive impact of a communication (Weiss,1953; Cook et al., 1979). With the passing of time the incidental discounting cue becomes dissociated from the merits of the advocacy resulting in a commensurate increase in persuasion.

The hypothesis offered by way of explanation for this phenomenon involved a distinction between the *learning* of a message and the *acceptance* of the advocacy which that message contains. It was argued that although the content of a communication may be well learned (i.e., attended to and comprehended), it may also be discounted or rejected on the basis of contextual variables. It was assumed, however, that over time the link between the discounting factor and the advocacy would decay more rapidly than the link between the advocacy and the conclusions based on it. This would result in the classic "sleeper effect", or delayed increment in persuasive effect (Weiss, 1953).

Replications of the original study by Hovland et al.,(1949) have been many. Evidence in support of the phenomenon has nonetheless been mixed and has lead to the recent qualification that it will be observed only if the persuasive content is strong, the discounting cue is substantial enough to suppress the initial persuasive impact of the communication, and the delay between observations is sufficiently long.

Having regard to the present study such a discounting cue may well have been provided by contextual factors such as time constraints or, alternatively by the actual nature of the advocacy itself. With respect to the former, the fact that subjects were assessed immediately following the experimental interventions may not have allowed them sufficient time to adequately consider the information presented. They may, as a result have been less wholehearted in their acceptance of the message, to the consequent detriment of their initial attitude scores. Here, then, the time limitations

necessary to the administration of the study could have functioned as a discounting cue.

Alternatively the quite blatant assertion in the communication that subjects should dismiss stereotypic perceptions of AIDS as a purely homosexual disease many have engendered a negative reaction which, in its turn, prompted resistance to the advocacy. The phenomenon of resistance is well documented under such circumstances and could well have impaired the persuasive impact of the communication. Additional time might, theoretically, have been required to dissociate the negative feelings of resistance from the advocacy, resulting in a delayed increment in persuasion consistent with the sleeper effect.

Given these possibilities, the apparent overall improvement in subjects' attitudes toward AIDS victims and homosexuals give rise to questions about the comprehensiveness of the ELM as an explanation for persuasion. How do Petty and Cacioppo (1986a) account for it?

While acknowledging the sleeper effect, Petty and Cacioppo distinguish it from the ELM in three respects. To begin with the ELM simply focusses upon *elaboration*, while the sleeper effect emphasizes *learning*. Secondly, being concerned with learning the dissociative cue hypothesis assumes a simultaneity of processing of both salient contextual cues and message content. In other words there is the potential for a joint, or additive effect of communication variables. The ELM, by contrast, focusses on issue relevent elaboration in which there is "a trade off between message processing and the operation of cues" (Petty & Cacioppo, 1986a). Thus, attitude will be determined primarily by message cues *or* by message content, but not by the two factors *together*. The third and final point of distinction, flowing from the second, is

that in contrast to the dissociative cue hypothesis, the ELM holds that it is possible for contextual factors or message cues to affect the way in which an advocacy is processed, but not to contribute independently to persuasion. "In other words meesage arguments and certain contextual variables may not have independent effects....[but] source and message factors may have interactive rather than additve effects in some contexts" (Petty & Cacioppo, 1986a, p.183)

While acknowledging these points of difference Petty and Cacioppo (1986a) fail to reconcile the two differing perspectives. Apparently glossing over the conceptual significance of the sleeper effect, they label it an unusual phenomenon, supported primarily by studies in which a discounting cue is presented *after* rather than before an advocacy is presented. In their concluding statement they coveniently hold that obtaining the effect " may require conditions that are infrequently present in either the 'real world' or in persuasion research." (Petty & Cacioppo, 1986a, p.183).

As appealing as the dissociative cue hypothesis may be as an explanation for the results obtained in the present study, however, it cannot be applied conclusively. In the first place the improvement in subjects' attitude scores was not intended and the study was not, therefore designed to test for it. In the second place the increase in the attitude scores for the Control, suggests that while the sleeper effect may have been influential, some uncontrolled variable in the experiment or extrinsic to it may have influenced subjects' thinking. In this context it should be noted that in the four weeks that intervened between the first and second post-tests over 60 newspaper articles concerning the nature and spread of AIDS were collected from two of the principal daily newspapers. Similarly, over the same period a doucumentary and a fictional "mini-series" on the theme of AIDS were screened on prime-time television. The information relayed, particularly by the televised presentations, was broadly

consistent with that presented to subjects in the experiment. If seen by subjects these portrayals could have reinforced the information contained in the experimental communications.

Clearly, then, a number of possible explanations can be offered for the general improvement in subjects' attitude scores and, again, because they were not readily tested or controlled for, no explanation or combination of explanations conclusively accounts for the improved results. Despite the fact that the expected differences in attitude scores on the second post-test were not obtained, therefore, it is not possible to conclusively dismiss the ELM.

Additive versus Interactive Effect.

For the same reason it is also difficult to draw any conclusions about whether the affective cue, or threat appeal, and the written message had an additive or interactive effect on the persuasive impact of the communications. The fact that in the combined Fear and Elaboration Condition yielded results totally contrary to expectations only renders the issue moot.

Gender.

Of the four experimental hypotheses, only that relating to gender effects on attitudes was conclusively supported. In this study the sex of the subject emerged as a powerful predictor of attitudes, not only toward homosexuals, but also toward AIDS victims. The observed tendency among men to be less favourable toward homosexuals is fully consistent with the accumulated literature (e.g., Herek, 1984: Kite, 1984) and was therefore not unexpected. What was perhaps surprising was the similar tendency for

males to be less sympathetic in their attitudes toward AIDS victims.

Under the ELM less favourable male reactions to homosexuals would be attributed to those factors determining "biased processing" of message content. Petty and Cacioppo (1986a) describe this form of processing as occurring when a particular variable motivates or enables a particular type of response, or conversely inhibits it. Among its determinants they nominate excessive message repetition, forewarning of persuasive intent, forewarning of message content, and self-schemata. Given that the participants in this study were not advised of the true purpose of the communications, or forewarned as to its content, and given further that there was no repetition of the message content, it is to "self-schemata" that we can usefully look for an explanation.

According to the latter construct, if a message is inconsistent with a person's initial opinion that person will tend to counter-argue and, as far as possible, eliminate any dissonance that such a message might engender. Applying this perspective to the present instance, male subjects may have been reluctant to admit to AIDS as being other than a homosexuals' disease for the reason that that acknowledgment may have carried with it not only heightened anxiety , but also an additional threat to self-perception as a result of forming more favourable views of homosexuals. Given this, there may have been motivation on the part of some males to counter-argue, with consequent adverse effect on the mean attitude score for males .

A similar rationale might be applied to explain the more negative reaction among males toward AIDS victims. Again it is tempting to attribute such attitudes to the identification in peoples' minds of AIDS with homosexuality, as well as to a related anxiety about the generality of the disease beyond the homosexual population.

The latter perspective is not too dissimilar from the ego-defense concept alluded to in the introductory chapter of this study. Its validity or otherwise notwithstanding, the fact that the biased processing construct can apparently accommodate a wide range of interpretations is a mark of the breadth of the framework offered by Petty and Cacioppo (1986a). While this is intrinsically useful, however, it does not necessarily validate the framework proposed for the explanation of the entire persuasion-attitude-behaviour relationship.

Single versus Parallel Channel Processing.

A more serious challenge to the ELM come not from this study but researchers who posit an "elastic capacity" notion of cognitive processing (Kahneman, 1973, cited in Stiff, 1986).

It should be clear by now that the assumption that individuals are limited in their information processing capacity is central to the ELM. The proposition that message recipients must choose *either* to respond to situational cues *or* to message content is essentially consistent with the single channel processing models advanced, among others, by Broadbent (1957, cited in Stiff, 1986) and Deutsch and Deutsch (1963). However, despite the evident adoption of that model by Petty and Cacioppo (1986a), it does not appear to be extensively supported. In a critique of the ELM offered by Stiff (1986) the findings of several researchers (e.g., Lindsay, 1970; Triesman & Fearnley, 1971) are cited as having established that far from being restricted to single cue processing people are capable of multi-channel stimulus processing.

According to one such multi-channel processing theory developed by Kahneman (1973, cited in Stiff, 1986), the capacity to process is described as " an increasing function of capacity demanded by the task" (Stiff, 1986). Low levels of demand will, according to this view leave considerable capacity free for the individual to process additional information or cues simultaneously.

Such a hypothesis has been beyond the scope of the present study to test. It does, however, highlight the limited support for certain of the critical assumptions upon which the ELM rests and suggests useful areas of further study.

Limitations of this Study.

A number of methodological problems have been alluded to in the previous sections of this study which place limitations on the number and weight of the conclusions that can be drawn about the validity of otherwise of the ELM. Possible difficulty in distinguishing experimentally between the central and the peripheral route, and the likelihood that the threat appeal served not as a strong, or positive argument, but rather as a weak, or negative one are among the problems encountered.

That is not to say, however, that conclusions cannot be drawn.

Conclusions.

To begin with, the difficulties experienced in manipulating persuasive variables in a manner consistent with the "recipe" formulated by Petty and Cacioppo (1986a) suggest that the ELM is, in fact, not readily operationalized. If such is the case the predictive utility of the ELM suffers as a result. In naturalistic settings it seems

doubtful that the level of control over variables which is apparently necessary to the ELM can be achieved.

With respect to those experimental hypotheses reflecting the assumptions of the ELM it is clear that these are unsupported. That is not to say, however, that the model should be discarded. The methodological problems mentioned in the previous section render the findings inconclusive.

What can conclusively be said on the basis of this study is that gender is a powerful predictor of subjects attitudes toward both AIDS victims and homosexuals, males being consistently less favourable than females. This suggests a necessary line of investigation into particular persuasive strategies that will be effective in bringing about a positive shift in those attitudes.

What is also clear from the findings is that the dispassionate written message, used in the context of the Elaboration Condition, was the most successful in bringing about desired attitude change. Fear, by contrast, appeared overall to have a counter-productive effect. This fact is quite consistent with research into the differential persuasive impacts of high versus intermediate or low levels of fear, and in this regard the findings have definite implications for the development of preventive health campaigns; not least in relation to AIDS.

As far as the utility of of threat appeals in the latter area the last word can go to Bruce Courtney, a journalist with the Sydney Morning Herald:

> "Frightening the underpants off people won't necessarily stop them promiscuously using the equipment contained therein."

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APPENDICES

APPENDIX I

STDC CONTROL

Subjects recruited from among outpatients attending the Sexually Transmitted Diseases Clinic represent a much less homogeneous population relative to the population of undergraduate psychology students. Although predominantly European, these subjects were distinguished on a variety of educational, racial and social characteristics.

Because the questionnaires were administered to the STDC subjects during scheduled appointments at the STD Clinic it was not possible to deal with them as a group. Questionnaires were presented on an individual basis in a hospital interview room which was provided for that purpose. The experimental setting accordingly differed from that used for the student sample,

Because of the unavailability of the STDC subjects for further post-testing, the attitude measures were administered once only during the two week following the start of the experiment.

The STDC subjects were used principally for reasons of incidental interest. The point of interest was whether the responses of persons receiving treatment for sexually transmitted diseases would be distinguishable from those of a presumably more naive student population. It was hoped that a high correlation between attitude scores for this sample and the sample of undergraduates might allow favourable conclusions to be drawn about the generalizability of the experimental findings.

APPENDIX II

THE KITE HOMOSEXUAL ATTITUDE SCALE.

(From Kite & Deaux, 1986).

QUESTIONNAIRE 2. [Kite Homosexuality Attitude Scale]

INSTRUCTIONS:

1. ENTER YOUR CODE AND YOUR GENDER ON THIS LINE _____

2. CONSIDER THE STATEMENTS BELOW. INDICATE YOUR LEVEL OF AGREEMENT OR DISAGREEMENT USING THE FOLLOWING SCALE:

1	2	3	4	5
Strongly Agree		Neutral		Strongly Disagree

3. PUT YOUR RESPONSES ON THE LINE WHICH FOLLOWS EACH ITEM.

EXAMPLE:

I think nuclear weapons are a good thing. 5

HERE THE RESPONSE INDICATES STRONG DISAGREEMENT WITH THE STATEMENT.

---

[1] I would not mind having homosexual friends. _____

[2] Finding out that an artist was gay would have no effect on my appreciation of his/her work. _____

[3] I won't associate with known homosexuals if I can help it. _____

[4] I would look for a new place to live if I found out that my flat mate was gay. _____

[5] Homosexuality is a mental illness. _____

[6] I would not be afraid for my child to have a homosexual teacher. _____

[7] Gays dislike members of the opposite sex. _____

[8] I do not really find the thought of homosexual acts disgusting. _____

[9] Homosexuals are more likely to commit deviant sexual acts such as child molestation, rape and voyeurism (peeping toms), than are heterosexuals. _____

[10] Homosexuals should be kept separate from the rest of society. (ie separate housing, restricted employment)

_____

[11] Two individuals of the same sex holding hands or displaying affection in public is revolting.

_____

[12] The love between two males or two females is quite different from the love between persons of the opposite sex.

_____

[13] I see the gay movement as a positive thing. _____

[14] Homosexuality, as far as I am concerned, is not sinful. _____

[15] I would not mind being employed by a homosexual. _____

[16] Homosexuals should be forced to have psychiatric treatment. _____

[17] The increasing acceptance of homosexuality in our society is aiding in the deterioration of morals.

_____

[18] I would not decline membership in an organisation just because it had homosexual members.

_____

[19] I would vote for a homosexual in an election for public office. _____

[20] If I knew someone was gay I would still go ahead and form a friendship with that individual.

_____

[21] If I were a parent I could accept my son or daughter being gay._____

{ Items 1,2,6,8,13,14,15,18,19,20 & 21 are reverse scored. }

APPENDIX III

ATTITUDES TO AIDS VICTIMS SCALE

QUESTIONNAIRE 1 [ATTITUDE TO AIDS VICTIMS SCALE]

INSTRUCTIONS:

1. ENTER YOUR CODE AND GENDER ON THE FOLOWING LINE _____

2. CONSIDER THE STATEMENTS BELOW. INDICATE YOUR LEVEL OF AGREEMENT OR DISAGREEMENT USING THE FOLLOWING SCALE:

1	2	3	4	5
Strongly Agree		Neutral		Strongly Disagree

3. PUT YOUR RESPONSE ON THE LINES WHICH FOLLOW EACH ITEM

EXAMPLE:

I think that the nuclear weapons are a good thing. 5

HERE THE RESPONSE INDICATES STRONG DISAGREEMENT WITH THE STATEMENT.

[1] Finding out that a friend had AIDS would not cause me to end our friendship. _____

[2] I would be completely unconcerned by working with someone with AIDS. _____

[3] I think that all AIDS sufferers should be imprisoned. _____

[4] I think that all AIDS sufferers should be forced to live apart from the rest of society (i.e., designated living areas and restricted employment.) _____

[5] I would be completely unconcerned for my children to go to a school attended by a child with AIDS. _____

[6] All known or suspected homosexuals should be forced to undergo testing for the AIDS virus. _____

[7] AIDS sufferers should be denied expensive specialist medicines so that other areas of our Health Services do not suffer. _____

[8] I think people with AIDS should be publicly identified. _____

[9] People with AIDS deserve to have the disease. _____

[10] I would be completely unconcerned about hugging or shaking hands with someone with AIDS.

_____

[11] I think AIDS is a divine punishment. _____

[12] AIDS is really a homosexual's disease. _____

[13] Heterosexuals with only few sexual partners need not be concerned about AIDS.

_____

[14] The establishment of the AIDS Support Network is an excellent thing.

_____

[15] All preadolescent and adolescent children should compulsorily receive explicit education about the dangers of AIDS, and about appropriate preventive sexual practices.

_____

{ Items 1,2,5,10,14 & 15 are reverse scored }

APPENDIX IV

CORRECTED ITEM-TOTAL CORRELATION FOR THE ATTITUDE TO AIDS VICTIMS SCALE

Question Number	Corrected Item-total Correlation	Alpha if item Deleted
1	0.249	0.717
2	0.589	0.677
3	0.238	0.716
4	0.249	0.715
5	0.493	0.689
6	0.378	0.702
7	0.238	0.718
8	0.376	0.704
9	0.377	0.707
10	0.272	0.716
11	0.334	0.709
12	0.376	0.705
13	0.166	0.722
-	-	-
15	0.150	0.730
16	0.464	0.696
17	0.133	0.725
18	0.251	0.715
19	0.252	0.715
-	-	-

NOTE. Due to ambiguity of Items 14 and 20 of the pilot questionnaire were deleted prior to analysis. Items 13, 15 & 17 were deleted after analysis, due to their low item-total correlation.

RELIABILITY COEFFICIENTS AFTER DELETION OF UNWANTED ITEMS:

N OF CASES = 63.0 N OF ITEMS = 15

ALPHA = 0.754

QUESTIONNAIRE

INSTRUCTION:

Please indicate your level of agreement with the items below using the following scale:

1	2	3	4	5
STRONGLY AGREE		*NEUTRAL*		*STRONGLY DISAGREE*

EXAMPLE:

I think that the "User Pays" approach should be applied only to the Psychology Department.

5

[PUT YOUR RESPONSE ON THE LINE WHICH FOLLOWS EACH QUESTION]

[1] Finding out that a friend had AIDS would not cause me to end our friendship.

_____

[2] I would be completely unconcerned by working with someone with AIDS.

_____

[3] I think that all AIDS sufferers should be imprisoned.

_____

[4] I think that all AIDS sufferers should be forced to live apart from the rest of society (ie., designated living areas and restricted employment.) .

_____

[5] I would completely unconcerned for my children to go to a school attended by a child with AIDS.

_____

[6] All known or suspected homosexuals should be forced to undergo testing for the AIDS virus.

_____

[7] AIDS sufferers should be denied expensive specialist medicines so that other areas of our Health Services do not suffer.

_____

[8] I think people with AIDS should be publicly identified.

_____

[9] People with AIDS deserve to have the disease. _____

[10] I would be completely unconcerned about hugging or shaking hands with someone with AIDS.

_____

[11] I think AIDS is a divine punishment. _____

[12] AIDS is really a homosexual's disease. _____

[13] I don't want to think about AIDS and its implications for me and those close to me.

_____

[14] Because of the risk of AIDS, people should never indulge in casual sex.

_____

[15] AIDS cannot be caught by someone with only one consistent sexual partner.

_____

[16] Heterosexuals with only few sexual partners need not be concerned about AIDS.

_____

[17] Just because someone has AIDS antibodies does not mean that they should tell their sexual partner(s) of their condition.

_____

[18] The establishment of the AIDS Support Network is an excellent thing.

_____

[19] All preadolescent and adolescent children should compulsorily receive explicit education about the dangers of AIDS, and about appropriate preventive sexual practices.

_____

[20] People should maintain exclusively monogamous relationships.

_____

APPENDIX V

FEAR INDEX.

ENTER PERSONAL CODE ☞ _____

GENDER ☞ _____

TICK BOX APPLICABLE FOR EACH QUESTION.

] During the video presentation how alarmed did you become at the read of AIDS ?

xtremely ☐ Highly ☐ Somewhat ☐ Not at all ☐

] During the video presentation how disturbed were you by the range id nature of the manifestations of AIDS ?

xtremely ☐ Highly ☐ Somewhat ☐ Not at all ☐

] During the video presentation how worried did you become at the ought of contracting AIDS ?

xtremely ☐ Highly ☐ Somewhat ☐ Not at all ☐

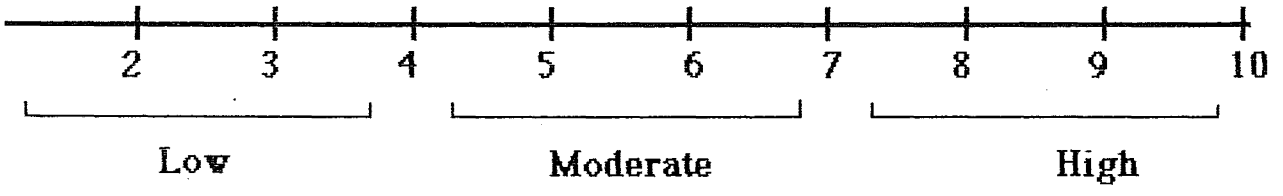
What adjective(s) best describe your mood after seeing the video and slide resentation?

Alarm ☐ Fear ☐ Disgust ☐ Depression ☐ Self-concern ☐

Hostility ☐ Coping ☐ Invulnerability ☐

Other (Please indicate briefly) _____

ate how fear-provoking you found the video and slide presentation using he following scale



APPENDIX VI

PERSUASIVE COMMUNICATIONS:

[A] LECTURE SCRIPT.

[B] WRITTEN MESSAGE

[A] LECTURE SCRIPT - FEAR CONDITION

AIDS was first recognised in 1981 in New York and Los Angeles after an extraordinary outbreak among previously healthy young men of Pneumocystis carinii pneumonia and a variety of malignant cancer known as Karposi's sarcoma.

The outbreak was of epidemic proportions and was associated with a complete failure of the auto-immune systems of the victims. Pneumonia and cancer were therefore found to be only two of a broad array of debilitating diseases and opportunistic infections all of which resulted ultimately in death.

In the earlier stages of the epidemic victims were identified as coming almost exclusively from within the community of male homosexuals and intravenous drug users. Isolated cases were reported among haemophiliacs.

But since 1981, both in the United States and the rest of the world, the spread of AIDS has been exponential, the number of victims doubling every 6 - 12 months, and it is now apparent that the disease has a real foothold within the so-called normal heterosexual population.

In fact in Africa now the disease is considered to be almost totally specific to heterosexuals rather than the homosexual population.

Despite research and pronouncements from the World Health Organisation we have no real idea of how widespread AIDS in fact is. The figure of 50,000 has been given as an estimate of the number of victims world wide, but it must be remembered that that figure represents only those who are in the terminal stages of the disease, and does not include those who carry the AIDS antibodies.

In the States we believe that as many as 2 million people may now be carrying the antibodies. In Africa that many people are expected to die of AIDS and AIDS-related illnesses over the next two years. There the problem is so severe that there has been speculation about the balance of power being affected.

New Zealand shows the same pattern and unfortunately your chance to control the spread here by immigration law or screening of blood products etc has passed. Since the first case was reported in New Zealand the numbers have risen dramatically.

The Director-General of your Health Department was quoted only last month as saying that within the next seven years in New Zealand the number of AIDS positive people will reach 20,000. On that basis, by the turn of the century AIDS will by far be the number one killer of people under fifty.

The implications of this rapid and more or less uncontrolled spread of AIDS are obviously staggering, particularly as we now believe that over 50% of those who have the AIDS antibodies will develop the full-blown syndrome within five years of exposure.And of those that do develop the syndrome it is believed that almost 100% will be dead within three years.

Of course research efforts continue into finding a cure, but the reality is that there is no cure. The best that we can manage is to retard the progression of the disease; and then only to those that can afford it. The cost of health care is prohibitive and it will worsen as the problem worsens. In New Zealand you have already had to establish a committee to see who gets AZT. Frankly, I don't see how your health system is going to be able to respond. Of course the disease is preventable, but only if individuals exercise discretion in their sexual behaviour, or cease taking drugs intravenously, or at least ensuring they use clean needles. The fact is that not everybody is going to do this. And, given the long incubation period for the disease one omission is all it takes for the infection to spread.

Many doctors and writers are now likening AIDS to the Black Death. But that analogy is not really a good one. Somebody with the plague didn't live long enough to carry the contagion extensively. Someone with the AIDS antibodies however can both appear and feel reasonably healthy for five and more years before suffering the acute stages of the disease. They probably don't even know that they've got it, and all the while they're passing the disease on through their sexual contacts, contaminated blood products, needles etc.

In New Zealand there are literally hundreds of people who now carry the AIDS antibodies but who are as yet completely unaware of that fact. These people of course are spreading the disease even further. The result clearly is that you / we are all at risk.

One of the real problems is that we're dealing with at least a five year time lag. Catching up is an almost impossible task, particularly now that AIDS has spread outside the traditional risk groups.

The problem of the spread of AIDs is made worse by the fact that people in risk groups often resist testing or, if they find they are carrying the antibodies, are unwilling to warn their sexual partners. In Los Angeles nearly 27% of those who tested as AIDS positive said that they wouldn't tell their partners -homosexual or bisexual.

Then there are those who are deliberately infecting people. There are many cases documented in the States and the United Kingdom.

I read of a case in your own papers of a man who publically admitted that he had slept with over 20 women knowing that he was likely to infect them with AIDS. Of those women that have been located several are now AIDS positive.

Because AIDS attacks the immune system AIDS victims suffer a wide range of disease and opportunistic infections. Almost all are severely debilitating and frequently painful. The mortality rate is 100%.

No part of the body is free from the consequences of AIDS. From the skin to the central nervous system, there is radical deterioration.

In the case of the brain, freqently there is an expansion of the lateral ventricals and shrinkage of the cerebrum. The condition is known as AIDS dimentia. This condition is very common among AIDS victims and results in marked deterioration of all mental process over a very short period of time.

Just as typical is the malignant cancer I have already referred to - Karposi's sarcoma. This can appear anywhere on the body and in the gastro-intestinal tract. It is progressive and fatal. It can be treated with chemotherapy but this often only adds to the many other discomforts endured by the AIDS victim. Surgery is resorted to, but again this can be problematic. A common site for Karposis sarcoma for example is the nose. Excision obviously be grossly disfiguring. Occurring near the eyes, moreover the condition can lead to blindness.

Another typical site for the sarcoma is the palate and oesophagus.

It is also not unusual for the genitalia to be affected.

Ironically, despite the poor prognosis for people with Karposi's sarcoma they are less likely to succomb to this than they are to other opportunistic infections such as pneumonia. Bluntly the sarcoma often outlasts the patient.

Severe and extremely painful ulceration of the gastrointestinal tract is another comon symptom. Ulceration of the oesophagus can be total. Oral thrush and ulceration is almost universal among AIDS victims.

Extensive, repetitive and extremely painful ulceration of the anal area is again typical and requires regular treatment.

Lymphoma, a painful swelling of the glands, is another common feature of AIDS. Because of the susceptibility of bone marrow in the area radio therapy is often ruled out and effective treatment is very difficult.

Skin diseases of course are manifested with some or all of the symptoms I have mentioned.

Xeroderma - a dry itchy scaling of the entire skin surface is not unusual and casues incessant discomfort. Relief from bath oils and skin creams is transitory.

Psoraisis is less common, but like most of the AIDS conditions requires extensive hospitalisation and treatment.

Shingles is another typical feature, occurring in over 25% of cases. Treatment must be given ealry if it is to be effective. Because shingles involves painful inflammation of the nerve ganglia the AIDS victim is likely to suffer extreme discomfort. The list goes on.

Susceptibility to other sexually transmitted diseases is also heightened. Extreme cases of genital warts and herpes are encountered among both men and women.

Despite the very wide variety of ways in which AIDS can be manifested it is of course premature aging and severe wasting that people most often associate with the disease.

Premature aging is indeed typical. The slide I showed earlier today showed the rapidity of the aging process after onset of the full-blown AIDS syndrome. The man you saw was 27 when he first presented. Two years later he had the facial features, skin tome a hair colouring of a man in his late fifties. He died shortly after the second photograph was taken.

Severe wasting is also almost universal and is caused, among other things by the malabsorption of food due to ulceration and infection of the gastro-intestinal tract. It is in short a case of slowly starving to death.

Complacency about AID obviously can't be afforded.

To begin with it's not just a homosexual's disease and now has a major foot hold in the heterosexual community. With the five year delay in manifestation of the disease moreover, it's likely that AIDS is more widespread within the general community than was believed.

As a serially transmitted disease, that is moving from one to another, it can evolve - just in fact as syphlis has. Whil at present it is usually only transmitted sexually or by contaminated needles and blood products, it is capable of developing into a more easily communicable form. Already in faxct another variety of AIDS has been detected and this fact should be viewed with real alarm.

[B] WRITTEN MESSAGE.

ACQUIRED IMMUNODEFICIENCY SYNDROME [AIDS]: THE FACTS.

(Excerpts from "In Point of Fact", a monthly publication of the World Health Organisation, and information from the N.Z. AIDS Foundation .)

AIDS is a disease that weakens the body's natural defences against infection. It is characterized by the destruction of key elements in the host immune system, resulting in a series of severe and ultimately fatal opportunistic infections and malignancies. The opportunistic infections most often found in people with AIDS are Karposi's sarcoma (a cancer) and Pneumoncystis carinii pneumonia. Neurological damage is increasingly common. There are over thirty other viruses, bacteria and fungi that take advantage of the lowered immunity of AIDS sufferers, but which of themselves normally pose no threat to life. A number of these AIDS related conditions (ARC's) make common illnesses such as influenza, herpes, thrush, more severe.

Not everyone who is exposed to AIDS virus develops AIDS or ARC's in the short term. Estimates to date indicate that within five years of infection 10-30% of individuals with immune deficiencies will have developed AIDS and another 20-25% would experience ARC's. There is as yet no cure or vaccine for the disease.

WHO IS AT RISK?

AIDS is not a "homosexual's" disease. Despite the fact that in Europe and the United States over 72% of cases of AIDS and ARC's occur from within the homosexual population, all sexually active people with multiple partners (or with partners who have multiple sexual partners) are at risk for the simple reason that the virus can be spread through any intimate sexual contact - heterosexual or homosexual. Homosexual men have been disproportionately affected in the Western world simply because they were one of the first groups outside Africa exposed to the virus. In Africa and Haiti AIDS sufferers come equally from among men and women almost all of whom are heterosexual. Many are children.

HOW IS AIDS TRANSMITTED?

The current medical opinion is that AIDS can be transmitted by:

[1] Intimate sexual contact with an infected individual. (76% of U.S cases)
[2] Using shared needles and syringes (17 %)
[3] Contaminated blood and blood products. (2%)
[4] Donation of infected body organs, other tissues or semen.(2%)
[5] Congenital infection.(1%)

The risk of infection is increased by:

[1] Having multiple sexual partners, particularly where bodily fluids are exchanged.
[2] Having sex with someone from the so-called "high risk" groups.
[3] Having anal sex.
[4] Having oral/genital and oral/anal contact.
[5] Sharing needles and/or syringes.

Studies show no evidence that the infection is passed by so-called casual interpersonal contact; i.e., contact that can be even quite close in the course of daily activities.

PREVENTION:

It is as yet uncertain what makes some people more susceptible than others to AIDS. Basically, however, a strong immune system is maintained by good health. Bad nutrition, physical and psychological stress, heavy use of illegal or prescription drugs and repeated infections (especially of sexually transmitted diseases) all depress the immune system.

It is still possible moreover to have enjoyable sex and not exchange any bodily fluids that might contain the AIDS virus.

The risk of AIDS can be significantly reduced by:

[1] Maintaining good nutrition and exercise, and avoid excessive drug or alcohol use.

[2] Avoidance of all sexual activity which might cause cuts or tears in the lining of the rectum, vagina or penis. (eg anal intercourse,fellatio, cunnilingus)

[3] Avoidance of sexual contact when genital or oral sores cuts or damaged skin are in evidence.

[4] Avoidance of any activity involving tissue damage and/or exchange of bodily fluids.(eg anal or vaginal intercourse without condom, fellatio)

[5] The routine use of condoms whenever indulging in vaginal or anal sex.

AIDS IN NEW ZEALAND.

The risk of AIDS to the general population should not be underestimated. Despite the fact that up to now infection has occurred mainly among gay men, intravenous drug users and haemophiliacs, the incidence among the heterosexual community is rising. The long incubation period of the disease (up to five years) moreover makes detection and management difficult and it is certain that many hundreds of people in New Zealand, heterosexual as well as homosexual, are by now infected.

Given the spread of AIDS outside the traditional risk categories and the fact that a cure of vaccine for AIDS is unlikely to exist within the next five to ten years, prevention is the only answer. Anyone who is sexually active needs to take AIDS seriously and practice those measures which will minimize the risk of infection.

APPENDIX VII

AFFECT AROUSAL.

Fear Index:

1. Alarm	Response	Frequency	Percent	Cum. Percent.
	Extremely	47	29.6	29.6
	Highly	85	53.5	83.0
	Somewhat	26	16.4	99.4
	Not at all	1	.6	100.0
2. Disturbance				
	Extremely	63	39.9	39.9
	Highly	74	46.8	86.7
	Somewhat	19	12.0	98.7
	Not at all	2	1.3	100.0
3. Conern				
	Extremely	34	21.4	21.4
	Highly	39	24.5	45.9
	Somewhat	73	45.9	91.8
	Not at all	13	8.2	100.0

APPENDIX VIII

Statistical Tables:
Attitude to AIDS Victims Scale.

TEST 1.

(A) Analysis of Variance.

Source	DF	SS	MS	F Ratio	F Prob.
Between Groups.	3	4.447E+02	1.482E+02	2.513+00	0.597
Within Groups.	199	11738.892	58.989		
Total	201	12183.547			

(B) Scheffe.

No two groups significantly different at the 0.050 level.

(C) A Priori Planned Comparison.

Contrast Coefficient Matrix.

	Grp 1	Grp 2	Grp 3	Grp 4
Contrast 1	2.0	-1.0	0.0	-1.0
Contrast 2	0.0	2.0	-1.0	-1.0
Contrast 3	1.0	1.0	1.0	-3.0

Pooled Variance estimate

	Value	S. Error	T-Value	D.F	T Prob.
Contrast 1	-0.672	2.610	-0.258	199	0.797
Contrast 2	-4.431	2.723	-1.627	199	0.105
Contrast 3	0.971	3.928	0.247	199	0.805

TEST 2.

(A) Analysis of Variance.

Source	DF	SS	MS	F Ratio	F Prob.
Between Groups.	3	9.773E+02	3.258E+02	5.503E+00	.0012
Within Groups.	200	11839.812	59.199		
Total	203	12817.0735			

(B) Scheffe.

Group

Mean	Group	2	1	4	3
59.957	2				
61.607	1				
63.444	4				
65.785	3	*	*		

(*) Denotes pairs of groups significantly different at the 0.050 level.

(C) A Priori Planned Comparison.

Contrast Coefficient Matrix.

	Grp 1	Grp 2	Grp 3	Grp 4
Contrast 1	2.0	-1.0	0.0	-1.0
Contrast 2	0.0	2.0	-1.0	-1.0
Contrast 3	1.0	1.0	1.0	-3.0

Pooled Variance estimate

	Value	S. Error	T-Value	D.F	T Prob.	
Contrast 1	-0.188	2.608	-0.072	200	0.943	
Contrast 2	-9.315	2.723	-3.422	200	0.001	*
Contrast 3	-2.980	3.901	0.765	200	0.445	

MANOVA.

Source.	SS	DF	MS	F	Sig/F
Within Cells	18988.841	195	97.379		
Condition	1008.435	3	362.812	3.726	.012
Sex	538.078	1	538.0738	5.526	.020
Cond. by Sex	715.337	3	238.445	2.449	.065
Test	733.701	1	733.701	45.405	.000
Cond. by Test	7.953	3	25.984	1.608	.189
Sex by Test	38.929	1.	38.929	2.409	.122
Cond. by Sex by Test	50.339	3	16.780	1.038	.377

APPENDIX IX

T-Tests with STDC Control.

Test 1.

Attitude Measure.	Group	N	Mean	S.D.	St. Error	T Value	DF	2-Tail Prob.
AAVS	Control	44	59.318	7.736	1.166	0.61	76	0.547
	STDC	34	58.265	7.460	1.279			
KHAS	Control	45	77.622	16.518	2.462	0.13	77	0.897
	STDC	34	77.147	15.646	2.683			

Test 1.

Attitude Measure.	Group	N	Mean	S.D.	St. Error	T Value	DF	2-Tail Prob.
AAVS	ELAB.	56	61.964	8.539	1.141	2.09	88	0.040 *
	STDC	34	58.265	7.460	1.279			
KHAS	ELAB.	56	87.679	13.020	1.740	3.44	88	0.001 *
	STDC	34	77.147	15.646	2.683			

APPENDIX X

Statistical Tables:
Kite Homosexuality Attitude Scale.

TEST 1.

(A) Analysis of Variance.

Source	DF	SS	MS	F Ratio	F Prob.
Between Groups.	3	3.492E+03	1.164E+03	5.280E+03	.0016
Within Groups.	198	43651.1615	220.460		
Total	201	47143. 0941			

(B) Scheffe.

		Group
Mean	Group	4 2 1 3
77.622	4	
77.711	2	
80.625	1	
87.679	3	* *

(*) Denotes pairs of groups significantly different at the 0.050 level.

(C) A Priori Planned Comparison.

Contrast Coefficient Matrix.

	Grp 1	Grp 2	Grp 3	Grp 4
Contrast 1	2.0	-1.0	0.0	-1.0
Contrast 2	0.0	2.0	-1.0	-1.0
Contrast 3	1.0	1.0	1.0	-3.0

Pooled Variance estimate

	Value	S. Error	.T-Value	D.F	T Prob.
Contrast 1	5.917	5.054	1.171	198	0.243
Contrast 2	-9.879	5.332	-1.853	198	0.065
Contrast 3	13.148	7.541	1.744	198	0.083

TEST 2.

(A) Analysis of Variance.

Source	DF	SS	MS	F Ratio	F Prob.
Between Groups.	3	3.001E+03	1.000E+03	5.185E+00	.0018
Within Groups.	200	38583.767	192.919		
Total	203	41584.8775			

(B) Scheffe.

Group

Mean	Group	2 4 1 3
80.170	2	
80.467	4	
83.179	1	
89.571	3	* *

(*) Denotes pairs of groups significantly different at the 0.050 level.

(C) A Priori Planned Comparison.

Contrast Coefficient Matrix.

	Grp 1	Grp 2	Grp 3	Grp 4
Contrast 1	2.0	-1.0	0.0	-1.0
Contrast 2	0.0	2.0	-1.0	-1.0
Contrast 3	1.0	1.0	1.0	-3.0

Pooled Variance estimate

	Value	S. Error	T-Value	D.F	T Prob.
Contrast 1	5.720	4.709	1.215	200	0.226
Contrast 2	-9.698	4.914	-1.973	200	0.050 *
Contrast 3	11.520	7.041	1.636	200	0.103

MANOVA.

Source.	SS	DF	MS	F	Sig/F
Within Cells	71608.533	194	369.116		
Condition	4628.393	3	1542.798	4.180	.007
Sex	2609.315	1	2609.315	7.070	.008
Cond. by Sex	1332.988	3	444.329	1.204	.310
Test	522.074	1	522.074	16.596	.000
Cond. by Test	7.405	3	2.468	.078	.972
Sex by Test	41.208	1	41.208	1.310	.254
Cond. by Sex by Test	60.094	3	20.031	.637	.592
